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MATERIALS

FOR A

HISTORY OF OIL PAINTING.

BY

CHARLES LOCK EASTLAKE,

R.A. F.R.S. F.S.A.

SECRETARY TO THE ROYAL COMMISSION FOR PROMOTING THE FINE ARTS IN CONNEXION WITH THE REBUILDING OF THE HOUSES OF PARLIAMENT, ETC., ETC.

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THE RIGHT HONOURABLE

SIR ROBERT PEEL, BART.

THIS WORK IS INSCRIBED,

AS

A TESTIMONY OF THE AUTHOR'S GRATITUDE

AND RESPECT.

PREFACE.

THE following work was undertaken with a view to promote the objects of the Commissioners on the Fine Arts. It professes to trace the recorded practice of oil painting from its invention; and, by a comparison of authentic traditions with existing works, to point out some of the causes of that durability for which the earlier examples of the art are remarkable. It was considered that such an inquiry, if desirable on general grounds, must be especially so at a time when the best efforts of our artists are required for the permanent decoration of a national edifice.

The want of a sufficiently extensive investigation of original authorities relating to the early practice of oil painting has led to various contradictory theories; and the uncertainty which has been the result has too often induced an impression that the excellence of art, in former ages, depended on some technical advantages which have been lost. It

is the object of the present work to supply, as far as possible, the facts and authorities which have hitherto been wanting, so as to enable the reader to form a tolerably accurate notion respecting the origin and purpose of the methods described, and to estimate the influence of the early characteristics of the art even on its consummate practice. Whatever may be the value of the methods in question considered in themselves, a knowledge of them cannot fail to be, at least indirectly, useful. It is hoped that by substituting an approach to historical evidence for the vagueness of speculation, and by rendering it possible for modern professors to place themselves in the situation of their great predecessors in regard to merely technical circumstances, one source of interruption, if not of discouragement, in the study of the more essential qualities of art, will be removed. At the same time, the author trusts that details relating to the careful processes which were familiar in the best ages of painting will not lead the inexperienced to mistake the means for the end; but only teach them not to disdain even the mechanical operations which have contributed to confer durability on the productions of the greatest masters.

The author has, for the most part, confined himself to the description and explanation of the

processes which were adopted at different times in certain schools, without entering into the discussion of their comparative merits. A mere collection of materials, though presented in due order, must, to a certain extent, assume an unconnected form: this will, perhaps, not be objected to by those who are chiefly desirous of verifying statements relating to practical details by documentary evidence. The minuter circumstances and descriptions adduced are to be regarded as connecting links in a chain of evidence which, especially when novel or when differing from received opinions, it was essential to fortify. As regards the interpretation of the various documents which have been brought together, the author has been careful, in all technical points, and indeed in all apparently questionable cases, to give the original passages together with his translations.

The history of oil painting divides itself into two sections; one relating to the Flemish, the other to the Italian system. The Flemish method, the investigation of which forms the subject of the present volume, necessarily precedes the other: the earliest traces of the art are found in the North, and the process which was invented or improved in Flanders was there developed with reference to a peculiar climate. The modifications

which that process underwent in Italy may be the subject of inquiry hereafter.

The original materials to which the author has had access during the prosecution of his task have been numerous: accounts of several are added in the form of notes at the end of some of the chapters, and elsewhere in the work. The National Records have furnished many hitherto unpublished and curious facts; and the author, not forgetting his obligations to the Commissioners on the Fine Arts, who supported his application to obtain extracts from these documents, takes this opportunity of thanking the authorities in the Record Offices for their valuable aid. To the officers in the British Museum, for their no less important assistance, he also begs to express his acknowledgments.

An interesting MS. (the *Mappæ Clavicula*) in the possession of Sir Thomas Phillips, Bart., has been recently published, edited by Mr. Albert Way, the Director of the Society of Antiquaries: it was desirable that the author should see this treatise some months since, before it appeared in print, and its possessor had the goodness to allow him to inspect a copy. The author is indebted to Mr. Lewis Gruner for procuring him a copy of a valuable MS. of the fifteenth century, which is preserved in the Public Library at Strassburg. Mr. Robert

Hendrie, jun., whose translation of Theophilus has just appeared, has been fortunate in bringing to light, from among the treasures of the British Museum, various other MSS. relating to painting, and has, in a very liberal spirit, pointed them out to the writer of this work. The most important is the MS. of Sir Theodore de Mayerne; the extracts which are inserted in the latter part of this volume, numerous as they are, give but an imperfect idea of the value of De Mayerne's notes. Mr. Hendrie has stated that he intends, with the permission of the Trustees of the Museum, to publish the entire work.

The inquiry proposed in regard to the history of Italian painting may hereafter be assisted by a reference to some copies of MSS. which the author owes to the kindness of Colonel Rawdon, M. P. Mrs. Merrifield, to whom the lovers of art and archæology are already indebted for her translation of Cennini and for other works, has, it is understood, succeeded in obtaining copies of several interesting documents preserved in Italian libraries: these will probably, ere long, be published; and it is believed that they will be of great assistance to the author, or to any other person better qualified for the task, in investigating the history of technical processes in Italy.

To Dr. Waagen and Professor Schlessinger of Berlin, Director Passavant of Frankfort, Mr. Andrew Wilson of Genoa, Mr. Kirkup of Florence, and Mr. Penry Williams of Rome, the author begs to offer his sincere thanks for their ready attention to his applications.

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ERRATA.

Page 39. line 1. dele "oil."
125. note, last line, for "1249" read "1294."

MATERIALS

FOR

A HISTORY OF OIL PAINTING.

CHAPTER I.

INTRODUCTION. — CONNEXION BETWEEN THE EARLY HISTORY OF PAINTING AND THAT OF MEDICINE.

It has been justly remarked that the moderns are indebted to religious confraternities for the preservation of knowledge during the dark ages. Science and art derived the elements of their new existence, in most cases, from the cloister. In such asylums their written materials, at least, could survive the rudest times; and practice, however degenerate, could scarcely fail, in its uniformity, to preserve some useful traditions.

Among the studies which had never ceased to be cultivated in monastic establishments, may be classed Medicine and the Decorative Arts. The first was of universal interest and utility; the latter were indispensable for the construction and embellishment of sacred edifices. For a

considerable period after the sixth century, the knowledge of medicine was almost confined to ecclesiastics, and it was to their exertions that the first schools for its study owed their origin.* Circumstances, resulting from these very facilities, afterwards led to the interference of Councils, in order to preserve the dignity of the Church; and the higher orders of the clergy were forbidden to exercise the art of healing in any form.† But this prohibition was never extended to the monks; and even when secular physicians in abundance rendered such aid superfluous, indeed even in modern times, scarcely a religious community was without its amateur practitioners, whose skill and benevolence were by no means confined to their order.

The convent had generally its dispensary; the furnishing of which involved chemical as well as botanical researches. Those monks who were painters (and during some ages monks were the

* See Sprengel, Geschichte der Arzneykunde, Halle, 1821—1828, and the authorities quoted by him, vol. ii. p. 474. After speaking of the zeal of Theodore of Canterbury, and the subsequent efforts of the English clergy in promoting these studies, he observes: "Les écoles qu'établirent ces ecclésiastiques étoient très fréquentées par les étrangers, et les savans Anglais firent éclore, principalement sous le règne de Charlemagne, les premiers germes des sciences en France et en Allemagne." — Jourdan's translation, vol. ii. p. 347.

† Sprengel, ib. The regulation was infringed without scruple. See, in the same author, the list of distinguished medical practitioners among the higher clergy.

only painters) had thus opportunities of becoming acquainted with the nature and properties of various materials fitted for their art. The empirical knowledge so obtained and recorded was indeed far from being necessarily accompanied with skill in the higher branches of design; the same principle which guaranteed tradition had rather a tendency to check invention: but the practical methods which time and religious appliances had consecrated were, under such circumstances, at least in no danger of being lost. By similar means, even the technical processes which had been at first adopted from classic sources and from the later Pagan artists may have been unintentionally preserved.*

That there should, at all times, be a connexion between medicine and painting might, perhaps, be inferred from the nature of the studies which are, to a certain extent, common to those arts. At all events, such a connexion has ever existed. This will be apparent, in the course of the present inquiry, from various circumstances. Examples of a more direct kind are not wanting. Thus, Hippocrates complained that the writings of some physicians had less relation to medicine than to the arts of design†; apparently alluding to anatomical

* A kind of wax painting, unquestionably derived from the ancient method, however now degenerate, is still practised by the painter monks of Mount Athos. See Didron et Durand, Manuel d'Iconographie Chrétienne, Paris, 1845, p. 44.

† De veteri Medicina, c. 36.; quoted by Emeric David, Recherches sur l'Art statuaire, p. 177.

works which had been too much confined to descriptions of the bones and muscles. Greek writers, speaking of the arts, employ the terms *pharmaka**, *pharmakeia*†, as synonymous either with pigments or with some substances commonly used in painting. The words *medicamen*‡ and *venenum*§ are employed by the Latins in the same sense. Pliny remarks that a certain gum (tragacanth) was "useful to painters and physicians;" ‖ and, speaking of the colourless Rhodian glue, observes, "painters and physicians employ it." ⸸ His thirty-fifth book, in which the subject of the arts is first exclusively treated, is introduced by a short preface beginning thus. "The nature of metals, and of the substances which are produced with them, has been

* Julius Pollux, Onomasticon, l. vii. c. 28. Dion. Halic. De Compos. Verborum, c. 21.

† Plutarch, De Oraculorum Defectu: quoted by Scheffer, Graphice, Norimb. 1669. Suidas, in voc. φάρμακον, among other meanings, states that the word sometimes signified the Persian naphtha, which may have been used in painting; but, in most of the passages above referred to (to which others might be added), the terms are merely synonymous with pigments or colours.

‡ Pliny, l. ix. c. 62.; medicamentum, c. 64. As the chapters in Pliny are differently arranged in different editions, it may be necessary to state that the edition of Lemaire, Paris, 1827—1832, is referred to in these notes.

§ Virgil, Georg. l. ii. v. 465. Scheffer, ib.

‖ "Sarcocolla . . . commis utilissima pictoribus ac medicis." —L. xiii. c. 20.

⸸ "Eoque pictores et medici utuntur." —L. xxvii. c. 71.

described in the immediately preceding book, in order that the immense field of therapeutics and the mysteries of the laboratory might be duly connected with the technical subtleties of sculpture, painting, and dyeing."* The relation is here plainly acknowledged. But there was a still stronger bond of union between medicine and painting in the middle ages, when the pious votaries of those arts believed that their patron St. Luke had practised both. The author of a Byzantine manuscript on painting, after invoking the Virgin, addresses himself to St. Luke as "the learned physician," and as the artist who had wrought "in colours and in mosaic."†

In the practice of the arts of design, as in the few refined pursuits which were cultivated or allowed during the darker ages, the monks were long independent of secular assistance. Not only the pictures, but the stained glass, the gold and silver chalices, the reliquaries, all that belonged to the decoration and service of the church, were designed, and sometimes entirely executed by them‡;

* "Metallorum, quibus opes constant, agnascentiumque eis natura indicata propemodum est; ita connexis rebus, ut immensa medicinæ silva, officinarumque tenebræ, et morosa cælandi pingendique ac tingendi subtilitas simul dicerentur." Lemaire reads "fingendique;" the common reading is here preferred.

† Didron et Durand, Man. d'Icon. p. 3.

‡ See Theophilus, Diversarum Artium Schedula, introduction to the third book.

and it was not till the thirteenth and fourteenth centuries, when the knowledge of the monastery began to be shared by the world at large, that painting in some degree emerged from this fostering though rigid tuition.

The subsequent history of the art shows how close the relation continued to be between the secular painters and the experienced ecclesiastics. The cloister and the church itself were the localities where those painters chiefly worked. Their choicer materials were often prepared by their employers; and fortunate was the artist, if otherwise skilful, whose lot happened to be cast among a community celebrated above others for attainments in chemistry. Such was, for example, the advantage which Pietro Perugino enjoyed when he resided with the monks of S. Giusto alle Mura.* The description which Vasari has left of that convent, in ruins even in his time and now no longer to be traced, may throw some light on the habits of the monks at earlier periods.

"Above the chapter-house was a large room, where those fathers occupied themselves in making glass for the windows, with the furnaces and other

* The Gesuati; not to be confounded with the later Jesuits. The convent in question was demolished, together with other detached buildings near Florence, in 1529, before or during the siege by the Imperialists under Philibert de Chalons, Prince of Orange. Three altar pictures by Perugino were removed in due time, and still exist in Florence; the frescos necessarily perished.

conveniences necessary for such operations; and as Pietro, while he lived, made the cartoons for these, all the works of the monks, produced in his time, were excellent." After speaking of the beauty of the garden, and of the careful manner in which the vines were trained round the cloisters, the historian continues. "In like manner the room where, according to their custom, they distilled odoriferous waters and medicinal preparations, was furnished with every apparatus of the best kind. In short, that convent was among the most complete and best arranged in the Tuscan state; and I have been desirous to leave this memorial of it, because the greater part of the pictures which it contained were by the hand of our Pietro Perugino."*

Raphael, in one of his letters, states that the Pope

* Pietro Perugino has been commonly regarded merely as the feeble precursor of Raphael. As an inventor and designer he would doubtless be eclipsed by a comparison with less distinguished names; but his merits as a colourist, viewed even now in comparison with the master-works of art, are great. It should be remembered that those merits were in a great measure new to the world in the latter half of the fifteenth century. This accounts for the terms in which Vasari speaks of Perugino's and Francia's colouring, "I popoli nel vederla corsero come matti a questa bellezza nuova" (*Vite*, proemio alla terza parte); and explains the admiration which the works of the former excited (when he was in the zenith of his practice) throughout Europe. (Ib. *Vita di P. Perugino.*) The picture in England which is perhaps best calculated to give an idea of this artist's merit as a colourist is the early Raphael at Blenheim. That work was entirely executed under the guidance of Perugino, and, as regards its colour, resembles the best productions of the elder master.

(Leo X.) had appointed an aged friar to assist him in conducting the building of St. Peter's; and intimates that he expected to learn some "secrets" in architecture from his experienced colleague (who was indeed an accomplished professor).* The best artists were well aware of the advantage of receiving technical lessons from such authorities, and it does not appear that the knowledge which was hived in the convent (notwithstanding the term "secret") was jealously withheld. Thus, Cennini, speaking of the mode of preparing a certain colour, says that the receipt could easily be obtained, "especially from the friars."†

It was not merely by oral instruction that technical secrets were communicated: the traditional and practical knowledge of the monks was condensed in short manuscript formulæ, sometimes on the subject of the arts alone, but oftener mixed up with chemical and medicinal receipts. These collections, still more heterogeneous in their contents as they received fresh additions from other hands, were afterwards published by secular physicians, under the title of "Secreti." Several will be referred to in the course of this work. An example

* Passavant, Rafael von Urbino, Leip. 1839, vol. i. p. 533. Vasari, Vita di Frà Giocondo. Baldinucci, ib.

† Trattato della Pittura, c. 40. Written in the first half of the 15th century; first published, with notes by Tambroni, in 1821 ; translated into English, with notes, by Mrs. Merrifield, in 1844.

may here be selected, because it was composed by a friar of that same order above described, with whom Perugino so long resided; it may even have been the work of a personal friend of the artist.

The author is described in the titlepage as a "reverendo padre Gesuato pratico ed eccellente."* The collection of recipes is small, but its character agrees well with the picture which Vasari has drawn of the Gesuati of Florence. Their prior was celebrated, according to the same historian, for the excellence of his ultramarine†; and the mode of preparing that colour, as described in the compendium, bespeaks unusual care. The horticultural taste of the monks is to be recognised in some directions for growing and improving fruit-trees: cosmetic and medicinal secrets are not forgotten.‡

* These receipts are published at the end of the *Secreti* of the reverendo Don Alessio, Lucca, 1557. The period of publication is by no means to be considered the date of the composition. There is an earlier edition of Alessio (which it has not been possible to see), and that writer states that he was eighty-two years of age before he gave his experience to the world. His book, he observes, was partly made up from earlier collections of the same kind: thus a preservative against the plague is stated to have been successful in England in 1348. The compendium of the Gesuato was probably written at the close of the fifteenth century.

† "Era . . . il detto priore molto eccellente in fare gli azzurri oltramarini."—*Vasari, Vita di Pietro Perugino.*

‡ In Alessio's compendium (and in others of the kind) is to be found the favourite receipt of the Venetian ladies: "a fare i capelli biondi come fila d' oro." Another begins: "Rimedio col quale fu guarita una donna che per farsi la bionda al

The varnishes may be noticed on another occasion; some of them confirm the authority of those published at a later period by Armenini. A mode of purifying linseed oil is important; not on account of its novelty, but because there can be no doubt, from the reputation of the Gesuati, founded on the habits which have been recorded, that it was commonly practised by the best painters in the early part of the sixteenth century. It will be described hereafter.

These earlier manuals serve to show the nature of the researches which were undertaken in the convent for the practical benefit of the arts. Various motives might induce the monks to devote themselves with zeal to such pursuits. It has been seen that their chemical studies were analogous; that their knowledge of the materials fittest for technical purposes — derived as it was from experiments which they had abundant leisure to make — was likely to be of the best kind. Painting was holy in their eyes; and, although the excellence of the work depended on the artist, it was for them to insure its durability.* By a singular combination of circumstances, the employers

sole," &c. The well-known representation in the *Costumes* of Cesare Vecellio is therefore historically correct.

* Occasional examples of the neglect of works of art by the dignitaries of the church are not forgotten; but such examples may be considered rare exceptions, and, in general, belong to the period when art was declining.

of the artists, the purchasers of pictures (for such the fraternities were in the majority of cases), were often the manufacturers of the painters' materials. Here then was another plain and powerful reason for furnishing the best prepared colours and vehicles. The cost of the finer pigments was, in almost every case, charged to the employer*; but economy could be combined with excellence of quality, when the manufacture was undertaken by the inmates of the convent.

Chemistry was still the professed auxiliary of painting, as well as of medicine, from the thirteenth to the seventeenth century. Colours and other materials, when not furnished by monks who retained the ancient habits of the cloister, were provided by the apothecary.† The most valuable

* See a letter from Benozzo Gozzoli to Pietro de' Medici, *Carteggio d' Artisti*, vol. i. p. 192.; another from Titian to the Doge (Loredano) of Venice, Ib. vol. ii. p. 142. See also various contracts in Gualandi's *Memorie originali Italiane.*

† In some accounts relating to the decoration of St. Stephen's Chapel, dated 1274 (2d of Edward I.), various colours are mentioned as having been purchased from "Roberto de Hakeneye *speciario.*" In a similar document, dated 1315, found by Vernazza in the archives of Turin, and published by him in the *Giornale di Pisa*, 1794, we find colours and painting materials "emptis a Toffredo apothecario." In a MS. of the Royal Library at Paris (hereafter to be mentioned more fully), written in 1431, we read that a certain colour "se trouve chez les apothicaires." When Francia, looking at Michael Angelo's statue of Julius II., inadvertently expressed his admiration of the bronze, the great sculptor angrily observed that he had the same obligation to the Pope for the bronze (meaning, as far

treatises on the merely technical department of the art were composed by physicians; and the alliance between medicine and painting was represented, at different times, by the friendship of Leonardo da Vinci and Marcantonio della Torre, Correggio and Giambattista Lombardi, Vandyck and Theodore de Mayerne.*

as the merit of the work was concerned), as Francia had to the apothecaries (speziali) who supplied him with colours. (*Vasari, Vita di Michelagnolo.*)

* See Vasari, Vita di Leonardo da Vinci. Pungileoni, Memorie istoriche di Antonio Allegri, vol. i. p. 19. 37. vol. ii. p. 34. Of De Mayerne hereafter.

CHAP. II.

THE ANCIENTS.

WHATEVER connexion may have existed between the technical processes of the ancients and the moderns, the general opinion that oil painting belongs exclusively to the latter appears to be well founded. The silence of the historians of classic art on the subject, amidst frequent allusions to other modes of painting, and the absence of all incidental reference to it by the classic writers generally, may be considered conclusive. This is, however, the chief evidence against the antiquity of oil painting. It is by no means certain that the materials necessary for the process were undiscovered even at that early period when the principal artists of Greece flourished. On the contrary, it will appear that oils which are called drying (the manufacture of which must have preceded the practice of oil painting even in the warmest climates) were known certainly before the Christian era, and probably in times of remote antiquity.

Oils of this description may have been even used as the chief ingredients in the composition of varnishes for paintings and other objects. The

movable pictures of the ancients were, for the most part, on wood, and either in tempera or in encaustic.* Works executed in either of these methods were, from an early period, often covered with a durable hydrofuge varnish, which, if not indispensable in all cases as a defence against damp, at least served to protect the painting from dust, and allowed of its being washed with safety.† It will be shown, that resins dissolved in a drying oil had, for many centuries before the invention of the modern oil painting, been employed for such purposes; and it is quite conceivable that a practice which was common among the Byzantine artists might have been derived, as many of their processes were, from the technical methods of the best ages of Greece, when varnishes of some kind were certainly in use. The well-known description which Pliny has given of the effect of that employed by Apelles is sufficient to establish the general fact. The historian, indeed,

* Pliny divides the principal painters whom he enumerates into two classes. These were, tempera painters and encaustic painters. Having mentioned the celebrated artists in encaustic, after the others (whose method he does not specially describe), he proceeds to name some less prominent masters generally, observing: "Hactenus indicatis *in genere utroque* proceribus, non silebuntur et primis proximi." It would hardly have been necessary to invite attention to this distinction, had not some writers endeavoured to confine the movable paintings of the Greeks to encaustic alone.

† The expression of Pliny, "Custodiretque a pulvere et sordibus," may refer to a varnish of this kind. (L. xxxv. c. 36.)

intimates that the preparation or application of that "atramentum"* was peculiar to the great artist: but whether this referred to an improvement in the composition of varnishes, or even to their first invention, it will hardly be supposed that Apelles was the only Greek painter who employed them.

The question respecting the practice of the ancients in painting is, however, but remotely connected with the object of the present inquiry. Not so the fact that the drying oils were known before even the germs of Christian art appeared. The following references will show that the principal materials employed in modern oil painting were at least ready for the artist, and waited only for a Van Eyck, in the age of Ludius and the painters of Pompeii.

Dioscorides, whose works were familiar to medieval writers on medicine, is supposed to have lived in the age of Augustus.† He mentions two drying oils, walnut oil and poppy oil. After describing the mode of expressing the oil of bitter almonds, and after mentioning the oleum balaninum (oil of ben)‡, he observes: "the sesamine

* It is not necessary to understand the word "atramentum," in all cases, as synonymous with black. In the treatise of Caneparius, *De Atramentis*, a chapter is headed "De Atramentis diversicoloribus." The varnish of the Byzantines was brown, from the resin which they used and from the action of the fire.

† See Kühn's Preface to his edition of Dioscorides.

‡ See Matthioli's Commentary on Dioscorides, Mantua, 1549, p. 30.

(oil) prepared from sesamum, and the caryine prepared from walnuts, are made in the same manner."* The oil of sesamum, though employed as a varnish in Japan†, cannot be called a drying oil in the usual acceptation of the term; but the description of walnut oil is conclusive; and it is to be observed that none of these materials are mentioned by the Greek author as novelties.

Speaking of the juice expressed from the seed of the black poppy, Dioscorides observes that it is easily diluted (forms an emulsion) with water; that when exposed to the sun the oil becomes separated from the mucilage, and then burns in lamps with a very clear flame.‡ Thus, whether applied to any other use than that here indicated

* Ἔλαιον σησάμινον καὶ καρύϊνον. — Ὁμοίως δὲ σκευάζεται τοῖς προειρημένοις, τό, τε σησάμινον ἐκ τοῦ σησάμου, καὶ τὸ καρύϊνον ἐκ τῶν βασιλικῶν καρύων συντιθέμενον. "Olea sesaminum et juglandinum.—Eodem quoque, quo antedicta, modo sesaminum oleum e sesamo, et juglandinum e nucibus juglandibus paratur."— *Dios.* l. i. c. 41., ed. curavit Kühn, Lips. 1829-30.

† Kæmpfer, quoted by Thunberg, Flora Japonica, Lips. 1784, p. 254.

‡ Κράτιστος δέ ἐστιν ὀπὸς ὁ πυκνὸς καὶ βαρύοσμος ... εὐχερῶς διειμένος ὕδατι ... ἔν τε τῷ ἡλίῳ τιθεὶς, διαχεύμενος [lectio altera, διαχριόμενος], καὶ πρὸς λύχνον ἐξαπτόμενος, οὐ ζοφώδει φλογί· φυλάσσων τε μετὰ τὸ σβεσθῆναι τὴν ἐν τῇ ὀσμῇ δύναμιν. "Præstantissimus autem est succus qui densus est et graveolens ... in aqua facilis dilutu ... sed soli expositus diffunditur [oleo obducitur], et ad lucernam accensus flamma ardet minime caliginosa: qui denique, postquam extinctus fuerit, suam odoris vim etiamnum servat."— *Dios.* l. iv. c. 65. Compare Pliny (l. xx. c. 76.), who appears to have copied the latter part of this description.

or not, it is evident that poppy oil was known to the ancients. The same writer mentions the juice of fresh hempseed, and speaks of decoctions of linseed; but the oils separable from them are not distinctly described, as in the former cases. The use of bruised linseed is more than once recommended among the medicaments of Hippocrates, and an astringent property is ascribed to it by the Greek physicians generally.

Galen, who wrote in the second century, observes (speaking with reference to medicine) that linseed* and hempseed† are in their nature drying. On the subject of nut oil he is distinct. He remarks that "the edible substance of walnuts is oily and light, and the juice therefore easily expressed: the longer the fruit is kept, the more readily this is effected. Hence (pure) oil may be expressed from the substance when it is old." ‡

It is to be observed that, hitherto, whenever the

* Τὸ δὲ τοῦ λίνου σπέρμα ξηραίνειν (δύναται).—*In Hippocrat. de acutor. Morbor. Victu*, l. iv. c. 95. ed. curavit Kühn, Lips. 1821—1833.

† Καννάβεως ὁ καρπὸς . . . ξηραντικός. — *De simpl. Medic.* l. i. c. 5.

‡ Τοῦ καρύου δ' αὐτοῦ τὸ μὲν ἐδώδιμον ἐλαιῶδές τ' ἐστὶ καὶ λεπτομερὲς, ὥστε διὰ τοῦτο καὶ ἐκχυλοῦται ῥᾳδίως, καὶ μᾶλλον, ὅσῳ περ ἂν ἀποκείμενον χρονίζῃ, τοιοῦτο γίνεται. ἔλαιον γοῦν ἐκθλῖψαι δυνατόν ἐστιν ἐξ αὐτοῦ παλαιουμένου. "Porro ipsius nucis id quod edendo est oleosum est et tenue, itaque etiam facile exprimitur, et quo diutius reconditum fuerit, magis tale efficitur. Quamobrem oleum ex eo inveterato exprimere liceat." — *De simpl. Medic.* l. vii. c. 12.

classic writers on natural history or medicine speak of oils (including even such as are drying), it is always with reference to medicinal, cosmetic, or culinary purposes. The medicinal oils enumerated by Pliny — who belongs to the writers of the first century—comprehend walnut oil.* It is also mentioned in his chapter on "artificial oil."† He speaks merely of the juice of linseed. ‡ In his notice of cosmetic ointments § he states that resins were added to them to confine their perfume (to give them body); and elsewhere observes that all resins may be dissolved in oil ‖: but the word *oleum*, alone, is to be understood to mean olive oil; which never dries. The silence of Pliny on the subject of pictures, when speaking of resins and drying oils, is not conclusive against the antiquity of the oil varnish. Modern writers on physics, not uninformed

* "[Oleum] e nuce vero juglande, quod caryinum appellavimus." — L. xxiii. c. 36.

† "Fit [oleum] e nucibus juglandibus, quod caryinon vocant." — L. xv. c. 7. It is not quite clear what the term "oleum factitium," at the commencement of this chapter, means. Some of the preparations are merely infusions in olive oil, but others are distinct oils. Pliny infers that such were unknown in Cato's time (nearly two centuries before the Christian era), because that writer speaks of olive oil only. (*De Re rustica.*) This is disproved by the mention of various other oils by Hippocrates, and by the ancient manufacture of still different oils in Egypt. (*Galen, De simpl. Medic.*, l. vi. c. 5.)

‡ L. xx. c. 92.

§ L. xiii. c. 1.

‖ "Resina omnis dissolvitur oleo." — L. xiv. c. 25.

on the subject of painting, sometimes enlarge on the uses of oils without ever alluding to their being employed in the arts of design. The oleum cicinum (Ricinus communis *L.*), one of the Egyptian oils mentioned by Dioscorides * and others, was used by the painters of the twelfth century as a varnish; this is proved by the following passage in the *Mappæ Clavicula*. "To render a Picture waterproof. — Spread the oil called cicinum over the picture in the sun; thus it is fixed so that it can never be effaced." †

The object of the above quotations is to show that drying oils were known at an early period, and that the chief ingredients necessary for the composition of an oil varnish, and even the modes of preparing oleo-resinous mixtures, were familiar. The next step is more important.

Aetius, a medical writer of the fifth and beginning of the sixth century, at length mentions a drying oil in connexion with works of art. After speaking of the oleum cicinum, he proceeds to the

* L. i. c. 38.

† "Ut pictura aqua deleri non possit. — Oleo, quod appellatur cicinum, super picturam ad solem perunge, et ita constringitur ut nunquam deleri possit." — Cap. cv. The title *Mappæ Clavicula* appears to mean a "key to drawing." The copy of this interesting MS. in the possession of Sir Thomas Phillipps, Bart., was written in the twelfth century; the method is therefore at least as old as that date. The oil in question (castor oil), according to Brande (*Manual of Chemistry*), when exposed to air, thickens, and at length solidifies; it is, therefore, a drying oil.

description of linseed oil, — now first distinctly mentioned, — and observes that it is prepared in the same manner; that its (medicinal) uses are the same, and that it had superseded the other.* Almost immediately after this he mentions walnut oil as follows. "Walnut oil is prepared like that of almonds, either by pounding or pressing the nuts, or by throwing them, after they have been bruised, into boiling water. The (medicinal) uses are the same: but it has a use besides these, being employed by gilders or encaustic painters; for it dries, and preserves gildings and encaustic paintings for a long time."†

This hitherto unnoticed passage is remarkable

* *Λινοσπέρμινον ἔλαιον.* — *Καὶ ἐκ τοῦ λινοσπέρμου δὲ σκευάζεται ἔλαιον ὡς τόδε προείρηται, καὶ χρῶνται αὐτῷ νῦν ἀντὶ τοῦ κικίνου, τὸ γὰρ κίκινον οὐκέτι κομίζεται, ἀλλὰ τοῦτο ἀντ' αὐτοῦ κομίζουσιν.* "Oleum Seminis Lini. — Sed et ex lini semine oleum præparatur quo modo prædictum est; et usus ejus jam est pro cicino, nam cicinon non amplius affertur sed hoc pro ipso afferunt." — *Aetii Amideni Libror. medicinal.* &c., Gr. Ven. 1534, l. i. voce E. Per Janum Cornarium Latine, &c. Lugduni, 1549.

† *Ἔλαιον καρύϊνον.* — *Ὁμοίως τῷ ἀμυγδαλίνῳ καὶ τοῦτο σκευάζεται, ἢ κοπτομένων καὶ πιεζομένων, ἢ εἰς ὕδωρ ζέον ἐμβαλλομένων μετὰ τὸ κοπῆναι. ἁρμόττει δὲ τοῖς αὐτοῖς. περιττὸν δὲ ἔχει τὸ χρησιμεύειν τοῖς χρυσοῦσιν ἢ ἐγκαίουσι, ξηραίνει τε γὰρ, καὶ πολὺν χρόνον συνέχει τὰς χρυσώσεις καὶ ἐγκαύσεις.* "Nucis oleum similiter ut amygdalinum præparatur, nucibus aut tusis et expressis, aut post contusionem in aquam ferventem conjectis. Commodum est in eosdem quoque usus. Insuperque hoc privatim habet quod inaurantibus aut inurentibus conducit. Siccat enim, et ad multum tempus inaurationes ac inustiones continet et adservat." — Ib.

on many accounts. The Greek writer had mentioned linseed oil in the same page, yet he speaks of nut oil as if it were exclusively employed in the arts. It thus appears that in the fifth century the drying property of linseed oil was either unknown or disregarded: but the passage establishes the fact, that, at that period, oil varnishes were used for gilt ornaments and for pictures. As regards the application on gilt surfaces, the practice is exemplified by a reference to subsequent writers. Mordants for gilding, composed of drying oils and other ingredients, appear to have been somewhat late inventions, and are mentioned by Cennini*: but the treatise on various arts published by Muratori from a manuscript at Lucca†, that of Eraclius‡, that of Theophilus§, and the Byzantine manuscript lately edited by MM. Didron and Durand‖, all these speak only of glutinous mordants. The nut oil mentioned by Aetius was therefore used *upon* gilt ornaments as a varnish, not underneath the gilt as a mordant. Eraclius is distinct on this point also;

* Trattato della Pittura, c. 91. 151. &c.

† Antiquitates Italicæ medii Ævi, vol. ii. fol. ed.

‡ De Coloribus et Artibus Romanorum. Published by Raspe, in his Critical Essay on Oil Painting. London, 1781.

§ Diversarum Artium Schedula. First published, in part, by Raspe; recently at greater length, with a French translation, by De l'Escalopier, Paris and Leipzig, 1843; and now about to be published entire, from a newly discovered copy, with an English translation and notes, by Mr. Hendrie.

‖ Manuel d'Iconographie Chrétienne. Paris, 1845.

he mentions the application of varnish to gildings.* It is therefore clear that an oil varnish, composed either of inspissated nut oil or of nut oil combined with a dissolved resin, was employed on gilt surfaces and pictures, with a view to preserve them, at least as early as the fifth century. It may be added, that a writer who could then state, as if from his own experience, that such varnishes had the effect of preserving works "for a long time," can hardly be understood to speak of a new invention. Leonardo da Vinci, writing a thousand years after Aetius, recommends, as a varnish, nut oil thickened in the sun.†

After the sixth century, as before observed, the practice of medicine, and that of painting also, remained for a long period almost exclusively in the hands of the monks. The Lucca manuscript above referred to, published by Muratori, is placed by Mabillon in the time of Charlemagne.‡ That treatise acquires a new interest from the important passage above quoted from Aetius. The

* "Quomodo vernicietur aurum ne perdat colorem. — Si aurum super gypsum positum verniciare volueris, non de puro vernicio, sed de illo colore qui efficitur ad aurumpetrum faciendum, mixto tamen cum oleo modico vernicio, ne sit spissum nimis, vernicietur super aurum." — *Erac. De Col. et Art. Rom.* Cennini, on the contrary, directs that gilt ornaments are not to be varnished.

† Trattato, Roma, 1817, p. 256.

‡ The emperor died at the age of seventy-one, in 814. The "time of Charlemagne" was therefore chiefly in the eighth century.

monks may be supposed to have had leisure to make experiments with the oils; and, guided perhaps by the strong expressions of the early Greek medical writers on the siccative quality of linseed, they had now ascertained that the oil which it furnished was at least as drying as the customary nut oil. A varnish, composed of linseed oil (lineleon) * and a needless variety of resins, with which gums even appear to be intermixed, is described in the Lucca document†, while nut

* "Lineleon ex semine lini fiet," are the words of the MS.

† The orthography, as given by Muratori, is here preserved. "De Lucide ad lucidas. Super colores quale fieri debet. Lineleon ÷ [a] 4 tereventina ÷ 2 galbanum ÷ 2 larice ÷ 3 libanum ÷ 3 murra ÷ 3 mastice ÷ 3 veronice ÷ 1 gumma cerasi ÷ 2 flore puppli ÷ gumma amygdalina ÷ 2 resina sappini ÷ 2 quæ pisande sunt pisa et grilela et cum superius mitte in gabata auricalca. Et mitte in forniculiclo et sine flamma coce ut non exeat foras et post cola cum linteo mundum. Et si radaverint, decoque; et usque dum spissa fiant, et qualibet opera picta aut scarpilata inlucidare super debeas. Et pone ad sole. Desicca illam."

Translation.— "Mixture of transparent substances, forming a varnish to be applied to coloured surfaces. Linseed oil 4 parts, turpentine resin 2, galbanum 2, larch resin 3, frankincense 3, myrrh 3, mastic 3, amber or sandarac 1, cherry-tree gum 2, (?) 1, almond-tree gum 2, fir resin 2. Pound and sift the dry materials, and put the whole, with the oil above mentioned, in a bronze vessel. Place the vessel on a furnace; let the fire be without flame, that the ingredients may not boil over. Afterwards strain through linen. If the composition be too

[a] As the sign ÷ is common to all the ingredients, any quantity may be assumed.

oil is nowhere mentioned in it. The age of Charlemagne was an era in the arts; and the addition of linseed oil to the materials of the varnisher and decorator may thus, on the above evidence, be assigned to it.

From this time, and during many ages, the linseed oil varnish, though composed of simpler materials (such as sandarac and mastic resin boiled in the oil) *, alone appears in the recipes hitherto brought to light. An unsuccessful attempt, hereafter to be mentioned more particularly, was made in the fourteenth century, to introduce nut oil in painting; but that vehicle, after having been so long discarded, appears to have been first restored to some share of favour by Van Eyck, in the beginning of the fifteenth century. Thenceforward the (nut or linseed) oil varnish, as distinguished again from varnishes composed of resins dissolved in essential oils, still continued to be exclusively used till the close of the fifteenth, or beginning of the sixteenth, century; when the Italians, who had already adopted a different system from the first improvers of oil painting, began to employ the essential oil varnishes.

thin, boil again till it becomes thickened. This mixture is to be employed as a varnish on any work in painting or sculpture. Place the work, when varnished, in the sun to dry." Even allowing for the effect of the liquid resins, the proportion of oil is so small in this composition that the varnish, after boiling, must have been of the thickest kind.

* Mappæ Clavicula, c. 25.

The treatises of the twelfth and thirteenth centuries have a peculiar interest; since they may be considered to represent the state of the art at the period when Cimabue adopted it from the Greeks: but the same general methods, inherited from Agnolo Gaddi by Cennini, reappear (in the *Trattato della Pittura* of the latter), but little altered, as regards oil painting, in the early part of the fifteenth century.

This slow progression is only to be explained by the traditional estimation in which tempera was held; for, if we place ourselves in the situation of the painters of the fourteenth century, it will appear, from the facts that have been adduced, that a fund of experience, greater than has been generally supposed to exist, was then accessible. The vague impression that prevailed, at the revival of letters, respecting the buried knowledge of antiquity, stimulated inquiries into the writings of classic authors. Van Eyck, according to a contemporary Italian historian*, consulted such authorities with profit; and the friars who studied medicine applied themselves with fresh ardour to the works of Dioscorides, Galen, and their

* Bartolommeo Facio (commonly Latinised into Facius) wrote his work *De Viris illustribus*, in 1456; it appears to have been first published in 1745. Speaking of Van Eyck, he observes: "Putaturque . . . multa de colorum proprietatibus invenisse, quæ ab antiquis tradita, ex Plinii et aliorum auctorum lectione didicerat."

followers. Some experiments and observations applicable to the humbler technicalities of painting, which occur in the works of those writers, may not have escaped notice at a time when invention was everywhere on the alert, and when that spirit was compatible with utmost veneration for the ancients.

The following directions for rendering oil colourless are given by Dioscorides. "Oil is bleached in this manner. Select it of a light colour, and not more than a year old; pour about five gallons into a new earthenware vessel of an open form, place it in the sun, and daily at noon dip and pour back the oil with a ladle, beating up its surface till, by constant agitation, it is thoroughly immixed and made to foam." The oil is to be thus treated for several days; the ingredients afterwards added (macerated Trigonella and resinous pine-wood shavings) are unimportant; but in conclusion it is observed, if "the remainder" of the oil (the aqueous portion being evaporated) "be not sufficiently bleached, place it again in the sun, repeating the above operation, till it becomes colourless."*

* Ἔλαιον λευκόν. — Λευκαίνεται δὲ ἔλαιον οὕτω. λαβὼν τὸ τῇ χρόᾳ μὲν λευκὸν, τὴν ἡλικίαν δὲ μὴ πλέον ἐνιαυσίου, ἔγχεε εἰς κεραμοῦν ἀγγεῖον πλατύστομον καινόν, ἔστωσαν δὲ μέτρῳ κοτύλαι ρ'. εἶτα θεὶς ὑφ' ἥλιον ἀνάχει κόγχῳ καθ' ἑκάστην ἡμέραν κατὰ τὸ μέσον, ὑψόθεν τῇ καταφορᾷ χρώμενος, ἵνα τῇ συνεχεῖ κινήσει καὶ πληγῇ μεταβάληται καὶ ἀφρίσῃ. τῇ δὲ ὀγδόῃ ἡμέρᾳ βρέξας τήλεως

It is by no means improbable that the directions in Cennini for bleaching and thickening linseed oil in the sun may have been derived from this source.* Dioscorides is twice mentioned by Vasari as an authority proverbial among the votaries of natural history and the healing art; the biographer even informs us that Antonio Veneziano, who, he observes, was a follower of Agnolo Gaddi (Cennini's master), quitted the practice of painting

καθαρᾶς ≺ν' ἐν ὕδατι θερμῷ, ἔμβαλε μαλακὴν γενομένην εἰς τὸ προειρημένον ἔλαιον χωρὶς τοῦ σταγγίσαι τὸ ὕδωρ. προσαπόδος δὲ καὶ δαλὸν πιτυΐνης ὡς ὅτι λιπαρώτατον καὶ εἰς λεπτὰ κατεσχισμένον τὰς ἴσας ὁλκὰς καὶ οὕτως ἔασον ἄλλας ὀκτὼ ἡμέρας διελθεῖν. μετὰ δὲ ταύτας ἀνάχει τῷ κόγχῳ τὸ ἔλαιον. τὸ δὲ λοιπὸν, εἰ μὲν εἴη τοῦ τέλους τετευχὸς εἰς καινὸν ἀγγεῖον — κατεράσας ἀποτιθέσω. — εἰ δὲ μὴ πάλιν ἐν ἡλίῳ θετέον αὐτό. καὶ ἐργαστέον ἄχρις οὗ λευκὸν γένηται. — Dios. l. i. c. 32.

"Oleum candidum.—Candidum redditur oleum sequenti modo. Sumito album colore nec anniculo vetustius, et in fictile novum lati oris infundito centum heminarum mensura. Dein soli expositum quotidie circa meridiem concha refundito, ex alto deturbans, ut continua motitatione et concussione agitatum mutetur et spumescat. Octava die fœnum Græcum purgatum drachmarum quinquaginta pondere aquaque calida maceratum atque adeo remollitum, aqua interim neutiquam expressa, in supradictum oleum conjicito. Insuper addito tædam pineam perquam pinguem et in tenues assulas concisam pari pondere, itaque dies alios octo elabi sinito. His transactis concha oleum denuo confundito. Quod superest, si finem assecutum fuerit, in vas novum — defundito ac recondito. Sin autem nondum (candorem contraxerit) oleum rursus insolandum et opus ipsum repetendum donec candidum evaserit."

* Trattato, c. 92. The passage will be given in another chapter; examples of the same practice in the time of Rubens will also be referred to.

for that of medicine, in consequence of studying Dioscorides.*

The efficacy of certain ingredients in accelerating the drying of oils was also known to the ancients. Information on this subject was open to the early oil painters in the following observations of Galen: "Litharge dries like all the other metallic medicinal preparations†;" and elsewhere, "white lead and litharge are astringent and drying."‡ A medical writer of the fourth century writes thus. "Place some [olive] oil in a new vessel, and put it over a moderate fire, then add well ground litharge, sprinkling it little by little with the hand; stir constantly till the oil begins to thicken."§ These passages are specimens of many such in ancient medical authors (beginning with Hippocrates) relating to the siccative quality of metallic oxides. It is, therefore, surprising that Theophilus, probably residing in Germany, and representing the

* Vasari, Vita di Antonio Veneziano. This painter appears to have been too old to be a scholar of Agnolo Gaddi (*Lanzi*, v. i. p. 41.), but it is at least certain that he lived about the same time. He was at work in the Campo Santo, at Pisa, in 1387.

† Λιθάργυρος ξηραίνει μὲν ὥσπερ καὶ τἆλλα πάντα τὰ μεταλλικὰ — φάρμακα. — *De simpl. Med.* l. ix. c. 3. § 17.

‡ Ψιμύθιον γοῦν καὶ λιθάργυρος στύφει καὶ ξηραίνει. — *De Method. medendi*, l. iii. c. 4.

§ "Oleum mittes in ollam novam et calefacies leni flammâ vel potius igne; tunc mittes sed paulatim de manu aspergens lythargyrum bene tritum et assidue spathomela agitabis, quousque oleum — aliquantum spissescat."—*Marcellus, De Medicamentis*, &c. Bâle, 1536.

northern followers of the Byzantine school, should have complained that linseed oil, mixed with the colours, was too long in drying *, when such well-known remedies for the evil were at hand.

* "Diuturnum et tædiosum nimis est."— *Div. Art. Sched.* l. i. c. 27.

CHAP. III.

EARLIEST PRACTICE OF OIL PAINTING.

In the preceding chapter it has been shown that walnut oil (probably thickened in the sun to the consistence of a varnish) was employed in the fifth century to protect paintings and gilt surfaces; and that a varnish, in which linseed oil was a chief ingredient, was used for similar purposes in the eighth century. It has been seen that the linseed oil varnish, improved and simplified in its preparation, was common in the twelfth century, at which time a thickened oil, without resin, was also employed. In neither of the documents whence these notices are taken is there any allusion to the immixture of solid pigments with the oils. The only approach to such a method consisted in tinging the varnish with a transparent yellow and spreading it over tin-foil, to imitate gold. Directions for preparing such a composition are given in two of the earliest sources above referred to, viz. the Lucca treatise, and the *Mappæ Clavicula*.* The process was com-

* The formula relating to the preparation of this lacker, ir the MS. published by Muratori, is headed "De tictio (sic) petalorum;" in the *Mappæ Clavicula*, c. 112. "Tinctio stagneæ petalæ."

mon in the thirteenth and fourteenth centuries, and appears to have been adopted for some of the decorations in St. Stephen's chapel at Westminster.

The earliest writers who distinctly describe the mixture of solid colours with oil for the purposes of painting are, Eraclius, Theophilus, Peter de St. Audemar, and the unknown author of a similar treatise which is preserved in the British Museum.* To these sources are to be added some authentic records of the thirteenth and fourteenth centuries, which prove that the methods described in contemporary treatises on art were then occasionally practised. These materials furnish a criterion for fixing the original date of certain later references to oil painting, or rather to its primitive methods; they show that some of those directions, though written in the fifteenth century, were merely repetitions of older formulæ, and consequently had no connexion with the improvements introduced by Van Eyck.

The precise chronological order of the writers above mentioned cannot, at present, be determined. There is also a difficulty in ascertaining whether, and to what extent, the later copies of such MSS. may have been interpolated. Both these questions are, however, unimportant, in reference to the inquiry here proposed; inasmuch as the earliest copies of the documents to be noticed, transcribed

* Sloane MSS. 1754.

in the thirteenth and fourteenth centuries, plainly describe the method of oil painting.

The age of Charlemagne, it has been observed, was an epoch in art in which remarkable technical improvements or changes may have taken place*; but, according to our present data, oil painting does not appear to have been then known. The next great age of development was the end of the twelfth, and beginning of the thirteenth century. At that period oil painting, in all probability then recently invented, was in a limited manner practised. The *Mappæ Clavicula* does not allude to it. The existing copy of that treatise — apparently the only copy — was transcribed in the twelfth century. The treatise itself, judging from its contents, was probably first compiled at that time. If so, the invention of oil painting may be dated soon after, as copies of the treatises of Eraclius and Theophilus, written in the thirteenth century, exist in the British Museum. Assuming that somewhat older transcripts of both these com-

* The varnish, described in the preceding chapter, which was in use at this time, is inferior to that employed at an earlier period, and inferior to that of the twelfth century. Nevertheless, the elements of a sound practice in design, originally imported, under the auspices of the emperor, from Italy, had taken root; and perhaps afterwards contributed to form the schools of the Lower Rhine. A poet who lived early in the thirteenth century, Wolfram Von Eschenbach, alludes, as if proverbially, to the excellent painters of Maestricht and Cologne. Fiorillo, Geschichte der zeichnenden Künste in Deutschland, &c. v. i. p. 419.

pendiums exist, still the close of the twelfth century is the earliest date that can be assigned to the authors. Raspe *, indeed, places Eraclius soon after the time of St. Isidore of Seville, who lived in the seventh century. For this there are no sufficient grounds; it is only probable that he was older than Theophilus, because the copy of that writer's work in the British Museum, transcribed early in the thirteenth century in Germany, contains portions which are found in Eraclius. Some of those portions are metrical; the other existing copies of Theophilus, with the exception of seven lines at the commencement, contain none that are so: the metrical passages in question have therefore the appearance of being added from a different and an earlier source.

Two copies of the treatise by Eraclius, *De Coloribus et Artibus Romanorum*, are familiar to the antiquary. One, formerly at Cambridge, and now in the British Museum †, appears to have been transcribed in the latter half of the thirteenth century; it was published, not very accurately, by Raspe. The other, which is more complete, is in the Royal Library at Paris; it was transcribed by Jehan Le Begue in 1431, apparently from a copy by an earlier compiler, Alcherius, who is to be traced from 1382 to 1411. The treatise, like that of Theophilus, is divided into three books; the first two are

* A Critical Essay on Oil Painting, London, 1781, p. 35.

† Egerton MSS. 840. A.

metrical, the third is in the form of the usual compendiums of the middle ages, from which collections of "Secreti" were afterwards printed. The notices relating to oil painting are in the third book: they are clearly descriptive of the method in both copies; the earlier MS. is, for the present, followed.

When Eraclius speaks of oil for painting, linseed oil is always to be understood. In the Paris MS. it is distinctly mentioned, "accipe oleum de lini semine factum," and "tritum cum oleo lini." Nut oil is also mentioned; but with reference only to the polishing of marble. The following is his description of the preparation of the surface of stone for painting:—

"If you wish to paint on a column, or on a stone slab, first dry it perfectly in the sun, or by means of fire. Then take white lead, and grind it very finely with oil on a piece of marble. Spread the white with a broad brush two or three times over the column, which is [supposed to be] already quite smooth and even, without any cavities. Afterwards prime with stiff white, applying it with your hand or with a brush, and let it remain awhile. When it is tolerably dry, pass your hand with some pressure over the surface, drawing your hand towards you, and continue to do this till the surface is as smooth as glass. You may then paint upon it with any colours mixed with oil. If you wish to imitate the veins of marble on a general tint (brown, black, or any other colour), you can give the appearance

when the ground so prepared is dry. Afterwards varnish in the sun."*

The preparation of the surface of wood for painting is thus described: —

"First plane the wood perfectly, rubbing the surface at last with shave-grass. If the wood is of such a nature that its roughness cannot be reduced, or if you have reasons for not wishing so to reduce it and at the same time are not desirous to cover it with leather or cloth, grind dry white lead on a slab, but do not grind it so finely as if you were to paint with it. Then melt some wax on the fire; add finely pulverised tile and the white lead already ground; mix together, stirring with a small stick; and suffer the composition to cool. Afterwards, with a hot iron, melt it into the cavities till they are even, and then with a knife scrape away inequalities. And should you be in doubt whether it is advisable to mix the white lead with wax, know

* "Quomodo preparatur columpna ad pingendum. — Si vis aliquam columpnam vel laminam de petra pingere, in primis optime ad solem vel ad ignem siccare permittes. Deinde album accipe et cum oleo super marmorem clarissime teres. Postea illam columpnam, jam bene sine aliqua fossula planam et politam, de illo albo cum lato pincello superlinies duabus vel tribus vicibus. Postea imprimes cum manu vel brussa de albo spisso et ita dimittes paululum. Cum vero modicum siccatum fuerit, cum manu tua album planando fortiter retrahes; hoc tam diu facies donec planum sit quasi vitrum. Tunc vero poteris desuper de omnibus coloribus et cum oleo distemperatis pingere. Si vero marbrire volueris super colorem, vel brunum, vel nigrum, vel alium colorem, cum siccata fuerit [superficies] marbrire poteris. Postea vernicia ad solem."

that the more you mix the harder it will be. The surface being smooth, take more white, finely ground with oil, and spread it thinly, with a brush adapted for the purpose, wherever you wish to paint: then let it dry in the sun. When dry, add another coat of colour as before, rather stiffer, but not so stiff as to make it necessary to load the surface; only let it be less oily than before; for great care is to be taken never to let the second coat be more fat [than the first]. If it were so, and at the same time abundant, the surface would become wrinkled in drying. And now, not to omit anything that belongs to the subject, I return to the first preparation of the surface of the wood. If, then, the panel on which you intend to paint is not even, cover it with leather made of horse-skin, or with parchment." *

The observation respecting the cause, or one of

* "Quomodo aptetur lignum antequam pingatur.—Quicumque aliquid lignum ornare diversis coloribus satagis, audi que dico. In primis ipsum lignum multum rade, equalem et planissimum radendo et ad ultimum fricando cum illa herba que dicitur Asperella. Quod si ligni materies talis fuerit ut non possis equare ejus asperitates, vel non velis propter aliquas occasiones, nec tu cum corio illud velis cooperire vel panno, album plumbum teres super petram siccum sed non tamen quantum si inde impingere velis. Deinde ceram in vase super ignem liquefacies tegulamque tritam subtiliter albumque plumbum quod ante trivisti simul commisces, sepius movendo cum parvo ligno et sic sine refrigerari. Postea aliquod ferrum fac calidum et cum ipso ceram funde in ipsas caverniculas donec equales sint et sic cum cutello desuper abrade ea que sunt scabrosa. Si autem plum-

the causes, of a wrinkled and shriveled surface, is not unimportant. Oil, or an oil varnish, used in abundance with the colours over a perfectly dry preparation, will produce this appearance: the employment of an oil varnish is even supposed to be detected by it.* The immixture of mucilage (as in newly expressed oil) produces the same effect, if the work be allowed to dry slowly; but, in the old process of preparing oil for painting by exposing it to the sun, the aqueous portion was entirely separated or evaporated. As regards the effect itself, the best painters have not been careful to avoid it. Parts of Titian's St. Sebastian (now in the Gallery of the Vatican) are shriveled; the Giorgione in the Louvre is so; the drapery of the figure of Christ in the Duke of Wellington's "Correggio" exhibits the same appearance; a Madonna and Child by Rey-

bum miscere dubitas cum cera, scito quod quantum plus miscueris tanto durius erit. Et sicut dixi jam equale facto habundancius plumbum valde subtilissime tritum cum oleo desuper per totum ubicumque pingere vis tenuissime extendendo cum pincello sic aptato. Deinde ad solem exsiccari bene permitte. Ac cum siccatus fuerit color, iterum superpone sicut prius fecisti de eodem et spissiorem pones sed non ita spissiorem ut habundanciorem colorem superponas sed ut oleum minus habeat. Nam et in hoc multum cavendum est ut nunquam crassiorem colorem superponas, quod si feceris et habunde posueris cum exsiccari ceperit rugæ desuper erunt. Nunc autem ut ea que supersunt simul omnia dicam, superius, quæso, me redire permitte ubi de ligni nuditate loquutus sum; si illud corio vel panno operire volueris. Quod si lignum quod pingere vis non fuerit equale, corio equino vel pergameno operi illud."

* Merimée, De la Peinture à l'Huile, Paris, 1830, p. 31.

nolds, at Petworth, is in a similar state, as are also parts of some pictures by Greuze. It is the reverse of a cracked surface, and is unquestionably the less evil of the two.* The varnishes mentioned by Eraclius will be noticed in another chapter. A yellow lacker (auripetrum or auripentrum), corresponding with the "tinctio petalorum" of the earlier treatises, was, like that, intended as a glazing over metal foils.

The treatise of the monk Theophilus is entitled *Diversarum Artium Schedula.* As before stated, it appears to have been compiled at the close of the twelfth century. Numerous copies exist; the different readings of several have been compared together in the interesting publication of M. de l'Escalopier.† The copy in the British Museum (which was not known to him, having been only recently brought to light) appears to be the most complete, if not the most ancient, transcript extant.‡ The following passages relate to oil painting: —

* The result in question may have been promoted in some instances by first passing a quickly drying medium thinly over the surface to be covered. When this begins to adhere, the oily colour which is spread over it, drying from the bottom, becomes wrinkled on its surface. Glazing on this, as exemplified in some of the examples referred to, has a certain mossy texture. It is, however, hardly to be supposed that such an appearance, though sometimes well calculated to render certain effects, was ever produced systematically or intentionally.

† Théophile, Prêtre et Moine, Essai sur divers Arts, publié par le Cte. Charles de l'Escalopier. Paris, 1843.

‡ This copy is about to be published, with a translation and notes by Mr. Robert Hendrie, jun.

"Take linseed oil and dry it in a pan, without water, on the fire. Put it in a mortar and pound it to a fine powder; then, replacing it in the pan and pouring a little water on it, make it quite hot. Afterwards wrap it in a piece of new linen; place it in a press used for extracting the oil of olives, of walnuts, or of the poppy, and express this in the same manner. With this oil grind minium or vermilion, or any other colour you wish, on a stone slab, without water; and with a brush paint over the doors or panels which you wish to redden, and dry them in the sun. Then give another coat, and dry again. At last give a coat of the gluten called vernition, which is thus prepared." The varnish will be described hereafter.*

Tin-foil being stained and varnished to imitate gold (in the mode before noticed): "Take any colours which you wish to apply, grinding them carefully in linseed oil, without water; and prepare tints for faces and draperies, as you did before

* "Accipe semen lini et exsicca illud in sartagine super ignem sine aqua. Deinde mitte in mortarium et contunde illud pila donec tenuissimus pulvis fiat, rursusque mittens in sartaginem, et infundens modicum aquæ, sic calefacies fortiter. Postea involve illud in pannum novum, et pone in pressatorium in quo solet oleum olivæ, vel nucum, vel papaveris exprimi, et eodem modo etiam istud exprimatur. Cum hoc oleo tere minium sive cenobrium aut quem alium colorem vis super lapidem sine aqua, et cum pincello linies super ostia, vel tabulas quas rubricare volueris, et ad solem siccabis. Deinde iterum linies, et rursum siccabis. Ad ultimum vero superlinies ei gluten quod vernition dicitur, quodque hoc modo conficitur." — L. i. c. 20.

in water colours; distinguishing, according to your fancy, animals, birds or foliage, with their proper colours." *

"All kinds of colours may be ground in the same kind of oil and applied on wood, but only on such objects as can be dried in the sun. For, having applied one [coat of] colour, you cannot add another until the first be dry, which in images [figures] and other paintings is too long and tiresome." † It is here to be observed, that, if the oil employed by Theophilus was unusually long in drying, the little care which he seems to have taken in expressing it may have been partly the cause. The commonest precaution would suggest that a press used for olive oil must be quite unfit for the preparation of a good drying oil.

"All colours employed on wood, whether ground in oil or in gum [water], should be applied in three successive coats. The painting being thus completed, place it in the sun, and carefully spread over it the gluten vernition. When this begins to flow with the [sun's] warmth, rub it gently with your

* "Accipe colores quos imponere volueris, terens eos diligenter oleo lini sine aqua, et fac mixturas vultuum ac vestimentorum sicut superius aqua feceras, et bestias sive aves aut folia variabis suis coloribus, prout libuerit." — L. i. c. 26.

† "Omnia genera colorum eodem genere olei teri et poni possunt in opere ligneo, in his tantum rebus quæ sole siccari possunt, quia quotiescunque unum colorem imposueris, alterum ei superponere non potes nisi prior exsiccetur, quod in imaginibus et aliis picturis diuturnum et tædiosum nimis est." — L. i. c. 27.

hand. Do this thrice, and then let it remain till it is thoroughly dry." *

"There is also a kind of painting on wood which is called translucid, or, by some, golden; it is produced as follows. Take a sheet of tin-foil, — not varnished nor tinged with yellow, but in its natural state, and carefully polished, — and line with it the surface which you wish to paint. Then, having varnished the foil, grind colours very finely with linseed oil, and spread them extremely thin with the brush; so let the work dry." †

Some of the practices in these primitive directions for oil painting were continued, not without reason, in the best periods of art; particularly the habit of allowing the under painting to dry thoroughly and even in the sun, before finishing, and finally before varnishing. The latter practice was universal. When Vasari observes that Van Eyck placed a varnished picture in the sun to dry "according to

* "Omnes colores sive oleo sive gummi tritos in ligno ter debes ponere, et pictura perfecta et siccata, delato opere ad solem diligenter linies glutine illud vernition et cum defluere cœperit a calore, leniter manu fricabis, atque tertio sic facies, et tunc sine donec penitus exsiccetur." — L. i. c. 28.

† "De Pictura translucida. — Fit etiam pictura in ligno quæ dicitur translucida, et apud quosdam vocatur aureola, quam hoc modo compones. Tolle petulam stagni non linitam glutine nec coloratam croco sed ita simplicem et diligenter politam, et inde cooperies locum quem ita pingere volueris. Deinde vernitiata petula tere colores imponendos diligentissime oleo lini, ac valde tenues trahe eos cum pincello; sicque permitte siccari." — L. i. c. 29.

custom" (come si costuma), it must be acknowledged that he was literally correct; for the process seems to have been common from the eighth century.*

It has been supposed that both Eraclius and Theophilus were of some country north of the Alps. The latter uses German words to explain his Latin †, and Cennini (of whom hereafter) expressly says that oil painting was much practised by the Germans. It was also known in France at an early period. This is proved by the MS. of Peter de St. Audemar, in the Royal Library at Paris. The document is contained in a volume of similar treatises (among which are the more complete copy of Eraclius above mentioned, and a portion of the treatise of Theophilus) transcribed, as already stated, in 1431, by Jehan Le Begue.‡

Peter de St. Audemar was a Frenchman, and an ecclesiastic; his treatise has internal evidence of being nearly coeval with that of Theophilus. The passages relating to oil painting are numerous; as the author, after describing various colours, generally mentions the medium with which they are to be mixed, according to their applications for illumi-

* Compare the passages relating to this practice, in the present chapter, with that before given from the Lucca MS.

† "Deinde habeas ferros graciles et latiores . . . qui sint in una summitate tenues et acuti, in altera obtusi, qui vocantur *meizel* [Meiſſel, chisel]." — L. iii. c. 71.

‡ Translations of these various MSS. are about to be published by Mrs. Merrifield.

nating (on parchment), for painting on wood, or on walls. For example: —

"White [lead], having been first dried, should be ground in, and mixed with, wine for illuminating on parchment; with oil for painting on wood and on walls. In like manner, grind and mix green [verdigris] with oil for wood, but on walls with wine, or if you prefer it, with oil." *

Blue "apply on walls with water and with egg, but on wood with oil." †

Minium "for walls is ground with gum water, never with egg; it may, however, be tempered with egg for parchment; if used on wood it should be mixed with oil." ‡

Black use "on walls with water or with egg, on wood with oil." § The varnishes in this MS. will be noticed elsewhere.

With this treatise may be classed a similar one in the British Museum ‖, written in the fourteenth

* "Sumptum autem et arefactum album teratur et temperetur cum vino et pingetur in pergamenis, et cum oleo in lignis et in maceriis. Similiter virideum cum oleo teres et distemperabis et operaberis in lignis sed in maceria cum vino vel si mavis cum oleo."

† "Hunc colorem [azurum] cum aqua et cum ovo in maceria pones, in ligno vero cum oleo."

‡ "Ponendo ipsum [minium] in maceriis teritur cum aqua gummata nunquam cum ovo. In pergamenis vero poni potest cum ovo distemperatum, sed in lignis cum oleo."

§ "[Nigrum] in maceriis . . . vel cum aqua vel cum ovo, et in lignis cum oleo."

‖ Sloane MSS. 1754.

century, but treating of a practice in art as early as that described by Theophilus. It is mixed up, as usual, with medical notes, and is thus introduced: "Incipit Tractatus de Coloribus Illuminatorum seu Pictorum." The early date of the writing, as compared with that of the MS. of St. Audemar, furnishes an additional proof of the antiquity of that treatise; the formulæ in both frequently resemble each other, for example:—

"Use blue on walls with water or with wine, but on wood with oil." *

"Grind white [lead] with wine for parchment, but with oil for wood and for walls. In like manner grind and temper green [verdigris] with oil for wood, and with wine for walls, or, if you prefer it, with oil... But for books do not grind it, but suffer it to dissolve in good and very clear white wine." †

In these and the former examples the rule of Theophilus seems to be kept in view; when wood is to be painted, oil is recommended for all colours, because movable panels could be dried in the sun; Theophilus even directs that painted doors should be so dried. White lead and verdigris only are

* "Hunc colorem [azorium] in maceria cum aqua et cum vino pones in ligno vero cum oleo."

† "Teres album cum vino et pingetur percamenis, cum oleo vero in lignis et maceriis. Similiter virideum cum oleo teres et distemperabis in lignis, et in maceriis cum vino vel si mavis cum oleo.... In libris vero non teres sed in vino bono albo et clarissimo... temperare permittes."

mixed with oil for walls; because such pigments, being themselves dryers, insured desiccation without the aid of the sun's heat. Minium, which generally dries well, appears to be an exception, as it is directed to be used on walls with gum water; its siccative quality is, however, uncertain.* It is also not impossible that the ancient practice may have been retained, of covering walls so painted with a coat of wax, in the mode prescribed by Vitruvius (l. vii. c. 9).

The MS. last quoted contains some portions in French, and probably, like that of St. Audemar, was composed in a French convent. The treatises cannot be placed later than the end of the thirteenth, or beginning of the fourteenth, century. This was the age of Dante, and "the art which was in Paris called illuminating" (limning) is well illustrated by such guides. Several of the MSS. in the collection of Alcherius relate to this art; others on the same subject are in the British Museum and in private libraries. Missal-painting was the occupation most generally followed in convents before the fifteenth century, and it is not surprising that so many directions relating to it should exist.

From what has been stated, it might be inferred

* "La mine, si vous la destrempez sur la palette seulement avec le cousteau, ne seiche que difficilement; mais si vous la broyez sur la pierre avec l'huyle avant que de l'employer, elle seichera assez tost." — *De Mayerne, Sloane MSS.* 2052.

that oil painting of a limited description must have been practised in Italy at this time. Of this there is sufficient evidence. Lorenzo Ghiberti states that Giotto occasionally painted in oil.* Again, according to a document found by Vernazza in the archives of Turin, a Florentine painter, named Giorgio d'Aquila, contemporary with Giotto, was employed in 1325, by the Duke of Savoy, to paint a chapel at Pinarolo.† The artist was furnished with a large quantity of nut oil for the purpose; but the oil, from some cause or other, did not answer, and consequently, as the document states, was sent into the ducal kitchen.‡ A failure of

* "Costui [Giotto] fu copio in tutte le cose, lavorò in muro, *lavorò a olio,* lavorò in tavola, lavorò di musaico," &c. A portion of the MS. of Ghiberti was published by Cicognara (*Storia della Scultura,* vol. iv.) who gives a description and critique of it. The MS. itself is now in the Magliabecchian Library at Florence.

† See a letter, addressed by Baron Vernazza to the Padre Guglielmo Della Valle, in the *Giornale di Pisa,* 1794.

‡ "Idem libravit in trayta octo raporum oley nucum expenditi in castro Pinarolii per manus magistri Georgii pinctoris in pingendo capellam dominy et eciam pro parte in cochina [coquina] per manus Nicolini de Mancheto et Ansermeti pro parte per litteras domini de testimonio et confessione datas die VIII. Augusti MCCCXXV. quas reddit. Et fuit expaiditum dictum oleum inchina [in coquina] pro parte, ut supra per confessionem prædictorum Nicolini et Ansermeti, quia non erat sufficiens in pingendo capellam."—Ib. Eight *rubbj* are equal to 200 lb. The expression "non erat sufficiens" relates therefore not to the quantity, but the quality, of the oil. It is worthy of notice that an English sculptor, "Magister Guglielmus Anglicus," is mentioned in the same documents, as having used

this kind was perhaps an exception, but it partly explains the observation of Theophilus, that oil painting was chiefly applicable to surfaces which could be dried in the sun. In an attempt to paint with ill-prepared nut oil, without siccative ingredients, and probably in a damp chapel, the process of drying may have appeared so hopeless as to induce a not unreasonable prejudice against the method. There were other objections of a different kind (to be noticed hereafter), which must have tended to limit the application of oil painting.

Among Italian documents of this time, in which oil appears together with materials for painting, the particulars relating to the decoration of the chapel of S. Jacopo, at Pistoja (1347), should not be forgotten. We there find the following entries: — "For eleven oz. of linseed oil, soldi I. den. VIII. For one lb. of giallolino, soldi VIIII. For three lb. of linseed oil, soldi v. For four hundred leaves of fine gold, lire XI. soldi VIII. For one lb. of varnish, soldi VI."* &c. Professor Branchi, who analysed

a large quantity of wax (334 lb.), in executing a whole length model, "pro facienda una ymagine," of the Countess of Savoy. The date is 1356.

* "Pro undecim onciis [a] olei lini seminis die s. [supradicta], lib. — s. I. d. VIII. Pro una libra giallolini die s. lib. — s. VIIII. d. —. Pro tribus libris olei lini seminis die s. lib. — s. v. d. —. Pro quadringentis petiis aurei fini die s. lib. XI. s. VIII. d. —. Pro una libra vernicis die s. lib. — s. VI. d. —," &c.— *Ciampi, Notizie inedite della Sagrestia Pistoiese*, Firenze, 1810, p. 146.

[a] Oil is still sold in Italy by weight, not by measure.

the remains of the colours taken from the chapel, found no trace of oil in them, but ascertained, on the contrary, that the binding vehicle was glutinous. He therefore concluded that the oil above mentioned had been used for some inferior decoration.*

Whatever may have been the purposes for which it was considered fit, it is clear from the foregoing statements that oil painting was sometimes employed in Germany, France, and Italy, during the fourteenth century, if not before. That it was also practised in England at the same periods, there is abundant proof. The only question, as regards its early use, both in this country and elsewhere, is, to what kinds of decoration it was applied.

Perhaps no public records contain so many notices relating to operations in painting in the thirteenth and fourteenth centuries, as those which are preserved in this country. Many have been published, but it is supposed that as many yet remain to be brought to light. The frequent mention of oil, among the materials for painting, in those records, has led many inquirers hastily to conclude that it was used in all cases for tempering the colours. This by no means follows; it has been seen that oil was certainly employed at a much earlier period in the composition of varnishes. The

* Ib., Append. p. 15.

following general references — though the documents have been consulted with a view to the present object only — will give some idea of the quantity of existing materials relating to the early English practice of art.

In 1239 (23d of Henry III.) oil is mentioned in connexion with painting. Similar notices appear in numerous account-rolls belonging to the reign of Edward I., viz. from 1274 to 1295; and in others dated 1307, the 1st of Edward II. Another series exists in the records of Ely Cathedral, the dates extending from 1325 to 1351. A great number of the same kind are preserved in accounts belonging to the reign of Edward III., and relating to the decoration of St. Stephen's Chapel, from 1352 to 1358. Partial translations (unfortunately without the original text) of some of the last-mentioned records have been published in Smith's *Antiquities of Westminster*.* The extracts made by that writer relate to glass-painting, architecture, and decorations generally. Of certain weekly accounts (belonging to the reign of Edward I.), amounting originally to one hundred and forty-two in number, he states that he had found eleven only.† In the course of a recent investigation, forty-four have been discovered. However interesting in other points of view, these numerous documents throw but little light on the practice of oil paint-

* London, 1837. † Ib., p. 76.

ing. The same materials constantly reappear, but there is no direct allusion to their use, except as regards the process of varnishing. Such passages as the following refer to the commonest operations of this kind: —

"To the same [Stephen Le Joigneur] for varnishing two coffers, 8*d.*;" * and elsewhere, "To Richard de Assheby for preparing with white, covering with ochre, and varnishing the King's Chamber, according to contract, 32 shillings." † A few specimens of the mandates and accounts above adverted to, beginning with those of the thirteenth century, will therefore suffice. The first in order of time is familiar to many, having been originally published by Walpole.

1239. "The King to his treasurer and chamberlains. Pay from our treasury to Odo the goldsmith and Edward his son one hundred and seventeen shillings and ten-pence for oil, varnish, and colours bought, and for pictures executed in the Queen's Chamber at Westminster, from the octaves of the Holy Trinity [May 25th] in the 23d year of our reign, to the feast of St. Barnabas [June 11th] in the same year, namely, for fifteen days." ‡

* "Eidem [Stephanno le Joignur] pro vernicione II. coffrorum VIII. d."

† "Richardo de Assheby pro dealbacione ocriacione et vernacione camere Regis ad tascham XXXII. s."

‡ "Rex thesauriario et camerariis suis salutem. Liberate de thesauro nostro Odoni aurifabro et Edwardo filio suo centum

It is here necessary to remark, in anticipation of the inquiry respecting varnishes, that the word *vernix* or *vernisium*, in the earlier notices of painting, does not mean a fluid composition, but dry sandarac resin, which, when melted and boiled with oil, formed a varnish, in the modern sense of the term. The proofs of this will be given hereafter. It may be sufficient here to observe, that, in the English accounts, the quantity of varnish is always noted by weight, and that of oil by measure. The above passage should be translated "for oil, sandarac resin, and colours." It will be seen, that the order relates to the work of fifteen days only; but it does not follow that the oil varnish was used upon pictures, or operations in painting, then executed. In the portion of time specified some works may have been varnished and others prepared for it. The date of this mandate is a year before the birth of Cimabue.

In 1259, Master William, the painter, with his assistants, received forty-three shillings and tenpence for painting a Jesse (no doubt the usual genealogical tree of Christ) on the mantelpiece of the King's Chamber (the Painted Chamber), and "for renovating and *washing* the paint-

et septemdecem solidos et decem denarios pro oleo, vernici, et coloribus emptis, et picturis factis in camerâ reginæ nostræ apud Westm. ab octavis Sanctæ Trinitatis anno regni nostri XXIII. usque ad festum Sancti Barnabe apostoli, eodem anno, scilicet per XV. dies."

ings on the walls of the said chamber."* This supposes that these celebrated works, consisting chiefly of subjects from the Old Testament and from the Apocrypha, were varnished. Size paintings, without such a protection, would hardly have been proof against this "ablution." The *tempera*, composed chiefly of yolk of egg, is firmer than size, and becomes very solid in time; but the coloured remains of the Painted Chamber (the varnish probably having become decomposed from damp during the lapse of ages) easily yielded to the sponge when they were examined in 1819.†

In the period from 1274 to 1277 (2d to 5th of Edward I.), an account, apparently relating to the Painted Chamber, contains the following items: — "To Reymund, for seventeen lb. of white lead, II. s. x. d. To the same, for sixteen gallons (?) of oil, XVI. s. To the same, for twenty-four lb. of varnish, XII. s. . . . To Hugo le Vespunt, for eighteen gallons of oil, XXI. s." &c.‡ Again: To Reymund, for a hundred [leaves] of gold, III. s. To the same, for twenty-two lb. of varnish, XI. s.

* "Magistro Willelmo Pictori cum hominibus suis circa Jesse in Mantell. camini Regis depingendum et circa picturam parietum ipsius camere Regis innovandam et abluendam, XLIII. s. x. d."

† See Gage Rokewode's Account of the Painted Chamber, 1842, p. 15.

‡ "Reymundo pro XVIII. li. albi plumbi II. s. x. d. Eidem pro XVI. gal. olei XVI. s. Eidem pro XXIIII. li. verniz XII. s. . . . Hugoni le Vespunt pro XVIII. gal. olei XXI. s."

I. d."* Elsewhere: "To Robert King, for one cartload of charcoal for drying the painting in the King's Chamber, III. s. VIII. d." † The last entry appears to relate to the drying of surfaces painted in oil, but the precaution may also have been necessary before varnishing tempera. The application of heat, even before painting in oil, according to the directions of Eraclius, will here be remembered: "Ad solem vel ad ignem siccare permittes." It can hardly escape observation, that the practice of oil painting taught by Eraclius agrees in many details with that exemplified in the English records; and the circumstance may warrant a supposition that he composed his treatise in this country.

1289 (17th of Edward I.). The following materials are enumerated in an account relating to repairs in the Painted Chamber. "White lead, varnish, green, oil, red lead, tin-foil, size, gold leaf, silver leaf, red ochre, vermilion, indigo, azure, earthen vessels, cloth," &c. ‡

* "Reymundo pro c. auri III. s. Eidem pro XXII. li. verniz XI. s. I. d."

† "Roberto King pro I. carecta carbonis ad picturam in Camera Regis desiccandam III. s. VIII. d."

‡ "In albo plumbo, vernicio, viridi, oleo, plumbo rubeo, stangno albo, cole [Fr. colle], auro, argento, sinople, vermilone, ynde, asura, ollis, panno et aliis minutis emptis ad viridandam novam Cameram de petra et ad emendaciones picture mangne Camere Regis sicut patet per particulas. Summa XII. li. VI. s. VI. d. ob." This extract is given in the work last quoted, but with some inaccuracies; for example, ranno for panno, and in the heading, verniorum for verinorum. There is no punc-

In 1292, oil and varnish are twice mentioned in a similar account.* In 1307, in consequence of a fire (which occurred in 1298), repairs were again undertaken, and similar materials were used.

The records of Ely are more conclusive as to the immixture of oil with the colours; and, as the materials are nearly the same as in the above extracts, it may be inferred that oil painting of some kind was employed at Westminster. Of this, indeed, there are other proofs.

1325. Among the items of an account, three flagons and a half of oil are mentioned "for painting the figures upon the columns."† The term "ymagines," in these and other English records of the time, is used indiscriminately for painted figures and for statues. In the treatise of St. Audemar the latter are distinguished as "ymagines rotunde." There can be little doubt that, in the above passage, painted figures were meant; and, in any case, oil colours were used.

In 1336, in a similar account, oil appears in

tuation in the original account-rolls, but vernicio viridi should not have been connected. It would be unjust to point out these trifling oversights in an important and interesting work, without, at the same time, paying a tribute of respect to the memory of one who so often distinguished himself as an accurate and intelligent investigator.

* "Item in III. quarteronis olei empti. Summa IX. d. In I. lb. vernicio [sic] empt. Summa IIII. d. In ocra, plastro, filo et pelli emptis," &c.

† "In III. lagenis et dimid. olei pro ymaginibus super columnas depingend. III. s. VI. d."

abundance, forty-eight flagons altogether; and this may explain its absence in other entries, where colours and other materials are mentioned without oil. It should also be observed that, if, in mutilated documents, "varnish" appears alone, it may always be inferred that the oil (without which the *vernix*, or sandarac, was of no use) was originally included in the list of materials. In the last-mentioned account columns were to be painted.*

In 1339 and 1341 oil again appears; in the account of the former date "for tempering the colours."†

In 1351 oil is mentioned "for making the painting in the chapel."‡ In all these documents, when varnish is included in the items, the quantity, as usual, is noted in weight.

The last accounts in the general list before given (1352—1358) relate to St. Stephen's Chapel.

* "Item in $\frac{\text{XX}}{\text{VII}}$ IV. lib. albi plumbi empt. de eodem XII. s. prec. I. d. In XIII. lagenis olei empt. de Thoma d'Elm X. s. III. d. ob. prec. lagen. X. d. ob. In VI. lagenis olei empt. de Thoma de Cheyk IV. s. XI. d. prec. lagen. X. d. In XXVIII. lagenis et dimid. olei empt. de Nich. de Wickam XXVI. s. I. d. ob. prec. lagen. XI. d. In dimid. lagen. olei empt. V. d. In vas terren. pro oleo imponendo IV. d. quad. In I. longa corda empt. pro le chapital deaurand. et columpn. depingend. VIII. d.," &c.

† "In XXXI. lagenis et dimid. olei empt. de quodam nomine de Wickham pro coloribus temperandis XXI. s. prec. lagen. VIII. d.," &c.

‡ "In oleo empt. pro pictura facienda in capella X. s.," &c. The above extracts relating to Ely Cathedral will be found in the *Archæologia*, vol. ix.

They are very numerous; but, as already observed, they afford no additional light respecting the particular applications of oil painting. In other respects they are of great interest; and, like those of the time of Edward I., indicate a practice in art corresponding in almost every particular with that described by Cennini.

The large supplies of oil which appear in the Westminster and Ely records, indicate the coarseness of the operations for which oil was required. The quantity supplied to Giorgio d' Aquila, at Pinarolo, has excited the surprise of Italian antiquaries*; but it now appears that contemporary examples, quite as remarkable, are to be found in English documents. Such notices as the following (not the only entries of the kind) at least remove all doubt as to the nature of the oil sometimes used, and the general purposes for which it was provided. The extracts relate to St. Stephen's Chapel. Sept. 19. 1352 (25th of Edward III.):—"For nineteen flagons of painters' oil, bought for the painting of the chapel, at 3*s.* 4*d.* the flagon, 43*s.* 4*d.*" † March 19. 1353:—"To Thomas Drayton, for eight flagons of painters' oil, bought for the painting of

* See a letter from the Padre Guglielmo Della Valle, in the *Giornale di Pisa*, 1794. He endeavours to show, notwithstanding the plain expression, "non erat sufficiens in pingendo," that the oil may have been used for lamps.

† "Die Lune XIX. Septembris. In XIX. lagenis olei pictorum emptis pro pictura capelle precium lagene III. s. IIII. d. XLIII. s. IIII. d."

the chapel, at 2*s.* 6*d.* the flagon, 20*s.*" * May 13, in the same year: — "To John de Hennay, for seventy flagons and a half of painters' oil, bought for the painting of the same chapel, at 20*d.* the flagon, 117*s.* 6*d.*" † Contrasting with this lavish use of oil, we find such entries as the following: — "To Gilbert Pokerig, for two flagons of size, bought for the painting of the said chapel, 2*d.* To the same, for two earthen vessels for heating the size, three halfpence." ‡ Eggs, which afforded the vehicle for the finer work in tempera, are not mentioned: this may, however, be accounted for either by the incompleteness of the records of this period, or by the nature of the work, as the item occurs in earlier documents, hereafter to be noticed, belonging to the reign of Edward I. (1274). It will be observed that the price of the oil used in St. Stephen's Chapel varies, and that sometimes it is more than three times the price of that employed at Ely about the same time. The expression "painters' oil," applied to the former, may explain this. It had been probably purified and deprived of its mucilage by exposure

* "Die Lune XIX. die Marcii. Thome Drayton pro VIII. lagenis olei pictorum emptis pro pictura capelle precium lagene II. s. VI. d. XX. s."

† "Die Lune XIII. die Maii. Johanni de Hennaij pro LXX. lagenis et di. olei pictorum emptis pro pictura ejusdem capelle precium lagene XX. d. CXVII. s. VI. d."

‡ "Die Lune XIX. die Marcii [1353]. "Gilberto Pokerig pro II. lagenis de cole emptis pro pictura dicte capelle II. d. Eidem pro II. ollis terreis emptis pro cole calefaciendo I. d. ob."

to the sun, in the mode then generally practised for the preparation of linseed oil which was to serve for better kinds of painting (on surfaces where it was desirable to produce a gloss), and for the composition of varnishes. This appears the more likely, as the oil was sometimes purchased of the (then) principal painter, Hugh of St. Alban's. *

In reviewing these various documents, and others of the kind, it will not be difficult to determine the modes in which oil was used among the materials for painting. First, it was employed in the composition of varnishes; probably also as a mordant for gilding; and, further, for a certain kind of glass-painting, which will be described in the next chapter. Next, as at Ely and Westminster, and as the directions of Eraclius and others prove, it was used from first to last in painting walls, columns, stone, and wood. Lastly, the proofs of its having been employed for pictures, in the modern sense of the term, are less distinct, and are not numerous. The painting of the chapel at Ely, and the figures (*ymagines*) on the columns, may have been of this kind. In referring to the treatises before quoted, it will be seen that Eraclius, when describing the mode of

* "Die Lune xxv. die Julii [1352]. Eidem [Magistro Hugoni de Sancto Albano] pro xiii. lagenis olei pictorum emptis pro pictura dicte capelle precium lagene iii. s. iiii. d. xliii. s. iiii. d." The same quantity, at the same comparatively high price, is entered on the 19th of September following. That extract has been already given.

painting columns, does not distinctly allude to any designs upon them; on the contrary, in entering into details, he speaks only of imitations of marble on the painted surface. So, when he describes the preparation of the surface of wood for oil painting, he begins, "if you wish to adorn any panel with different colours," without the least allusion to any design.* The only indication of a higher kind of art is where he recommends fastening leather or parchment over the panels, as a ground (when duly prepared) for oil painting. This evinces greater care than would be necessary for ordinary decoration. Such a parchment preparation, covered with a gesso or plaster of Paris ground, is sometimes found in English tempera pictures of the fourteenth century. The darkly varnished Byzantine pictures are frequently painted on leather glued to the wood. A similar material (pellis) is mentioned, together with size and gesso, in an

* It is to be remembered that the question here relates to designs in oil colours, not in tempera. When designs are referred to in the Westminster accounts, the material with which they were executed (or to be executed) is not specified; for example: "Magistris Hugoni de Sancto Albano et Johanni de Coton pictoribus operantibus ibidem super protractatura diversarum ymaginum in eadem capelle per IIII.^{or} dies et dimidium infra idem tempus utroque ipsorum capiente per diem XII. d. IX. s." Elsewhere we read, "Magistro Hugoni de Sancto Albano pictori operanti ibidem super ordinacione picture diversarum imaginum per II. dies," &c. The date is July, 1352.

account above given, dated 1292: but such a preparation is mentioned by Eraclius incidentally, as a possible, but almost unnecessary, expedient for securing a smooth surface. On the whole, therefore, although his observations bespeak more knowledge of the mere process than is to be met with in contemporary or immediately succeeding writers, the evidence contained in his treatise respecting the application of that process to painting, properly so called, may be considered inconclusive.

Theophilus, though by his own confession dissatisfied with the method, describes its somewhat higher applications more clearly, when he speaks of depicting various objects on an imitation of a gold ground (tin-foil stained and varnished). Among the colours to be prepared for the work, he mentions "tints for faces;" and, as the foil ground, probably occupying all the panel, was first varnished, the whole of the superadded painting must have been in oil. This passage in Theophilus — with the important words "mixturas vultuum," — and the records of Ely Cathedral, are the strongest proofs hitherto found of the entire execution of pictures in oil in the thirteenth and fourteenth centuries. The arguments that have been adduced by various writers, in favour of pretended oil pictures belonging to those periods, may be passed over; as it has been found impossible, in some cases, to distinguish between a painting executed with oil colours and a tempera picture

which may have imbibed the oil varnish. The execution in oil of certain subordinate portions of works in tempera may have been more general, as it was certainly common in Italy. For examples of this practice it will be necessary to consult those authors who, though writing early in the fifteenth century, still recorded the processes of a former age.*

* The claims of different nations to what has been called "antiquity of ignorance" are of little importance; but it is clear, from the documents which have been adduced in this chapter, that, as regards the mere process, and without reference to its application, oil painting was more generally and successfully employed in England than elsewhere, during the thirteenth and fourteenth centuries. This may be another reason for supposing some connexion to have existed between Eraclius, who appears to be the oldest writer on oil painting, and the country where his directions were most commonly put in practice.

CHAP. IV.

OIL PAINTING DURING THE LATTER PART OF THE FOURTEENTH CENTURY.

The documents coming under the class above adverted to, and now proposed to be examined, are, the *Trattato della Pittura* of Cennini; a Venetian MS. in the British Museum; and such portions of the Byzantine MS. before mentioned as have internal evidence of antiquity.

With regard to the date of the first, Cennini himself informs us that he had studied for twelve years with Agnolo Gaddi (who died about the year 1387). He further states that the methods which he communicates had been taught him by that painter; he might have added, perhaps with truth, that they were derived, through Taddeo Gaddi, from Giotto. The precise period when Cennini committed his experience to writing is, therefore, of little importance. It is certain that a considerable part of his life belongs to the fourteenth century, and that his treatise professedly describes the practice of a master of that age. According to the copy which was published by Tambroni (a transcript of the eighteenth century), the work was completed in 1437, in the debtors' prison in Florence. This, it has been observed,

is no proof that Cennini's original MS. was not written earlier. The oldest and best copy known, that in the Ricciardi Library at Florence, has no such date.

The "fourth part" of this treatise contains passages relating to oil painting. As an introduction to these, it will be proper to advert to some directions of Eraclius not hitherto noticed. It may have been remarked that that writer does not, like Theophilus, restrict oil painting to such surfaces as could be dried in the sun. On the contrary, he gives directions for the painting of columns, which, it is to be supposed, were in the interior of churches. Indeed he does not complain that the process of drying was in any case "long and tedious." It might, therefore, be concluded that he used a drying oil, in the modern sense of the term: accordingly, in the copy of his treatise in the Le Begue collection, a drying oil is thus described: —

"How to render Oil fit for mixing with colours. —Put a moderate quantity of lime into oil and boil it, skimming occasionally; add white lead according to the quantity of oil; place it in the sun for a month or more, stirring often. Know that the longer it remains in the sun the better it will be. Afterwards strain, and keep, and mix the colours with it." *

* "De Oleo quomodo aptatur ad distemperandum colores.— Calcem in oleo mensurate pone et illud despumando coque.

That this passage was not inserted by Le Begue (1431) is evident from his giving a translation of it among some formulæ in French, collected from various sources, at the end of his volume. The question whether it may have been added by Alcherius, towards the end of the fourteenth or beginning of the fifteenth century, may possibly be determined hereafter by a reference to other MSS. of Eraclius, should such exist. An expression in the earlier copy (thirteenth century), now in the British Museum, at least indicates the use of an oil thickened by exposure to the air; "de crasso oleo poteris verniciare." But the use of such a medium is hardly sufficient to account for the application of oil painting, according to his directions, in situations where, it seems, the oil of Theophilus and that of Giorgio d' Aquila would not dry. It is therefore probable that he used a siccative ingredient in preparing his oil; and white lead, the substance mentioned in the Le Begue MS., might first suggest itself, as its effects were constantly witnessed.

The immixture of a small quantity of lime with the oil, as directed in the above receipt, is remarkable, as the same ingredient was employed at Leyden (as will be shown hereafter) in the seven-

Cerosium in eo secundum quod de oleo fuerit pone, et ad solem per mensem vel eo amplius frequenter removendo pone. Scito quod quanto diutius ad solem fuerit tanto melius erit. Postea cola et serva et colores inde distempera."

teenth century, expressly for the purpose of neutralising the oleic acid. It should be observed that, in the older process, the white lead, acting as an alkaline oxide, would render the previous treatment with lime unnecessary.

The Italian system, from first to last, was less complicated; precautions to insure drying being less requisite in a warm climate: but the thickening of the oil, by long exposure to the sun, was an almost universal practice. In the semi-resinous state which the fluid was thus suffered to attain, it had the (desired) effect of producing a gloss on the pigments with which it was mixed. From the same cause, however, it was rendered unfit, as a vehicle, for finer work. This thick consistence of the oil — the result not of accident, but of choice — seems, indeed, to be the chief reason why oil painting was long confined to inferior operations. The consideration of this subject will be resumed.

Cennini thus introduces the subject of oil painting:—

"C. LXXXIX. *How to paint in oil on walls, on panels, on iron, or on whatever surface you please.* — Before I proceed further, I will teach you to paint with oil on walls, or on panels (the method is much employed by the Germans), and also on iron and on stone. First we will speak of walls.*

* "CAP. LXXXIX. *In che modo si lavora a olio in muro, in tavola, in ferro, e dove vuoi.*

"Innanzi che più oltre vada, ti voglio insegnare a lavorare

"C. XC. *Preparation of walls for painting in oil.* —Spread mortar over the wall as you would for painting in fresco, except that, whereas you then covered portions only at a time, you are now to cover the whole surface intended for your work. Then draw in your subject with charcoal, and fix the design with ink or with verdaccio [a dull green] duly tempered. Then take a little size, well diluted. A whole egg, beaten in a porringer with the milky juice of the fig-tree, is still better. Add to the egg a glassful of clear water. Then, either with a sponge or with a soft and broad brush, pass it once over all the surface to be painted, and leave it to dry at least for one day.*

"C. XCI. *How to prepare an oil fit for tempering colours, and also fit for mordants, by boiling it over the fire.* — Among the useful things which you require to know, you should be acquainted with the mode of preparing this oil, which is used for mor-

d'olio, in muro o in tavola (che l'usano molto i Tedeschi), e, per lo simile, in ferro e in pietra. Ma prima diremo del muro."

* "CAP. XC. *Per che modo dei cominciare a lavorare in muro ad olio.*

"Ismalta in muro a modo che lavorassi in fresco: salvo che, dove tu smalti a poco a poco, qui tu dei smaltare distesamente tutto il tuo lavoro. Poi disegna con carbone la tua storia, e fermala o con inchiostro o con verdaccio temperato. Poi abbia un poco di colla bene inacquata. Ancora è miglior tempera tutto l'uovo sbattuto con lattificio del fico in una scodella; e mettivi in su 'l detto uovo un migliuolo d' acqua chiara. Poi, o vuoi con ispugna o vuoi col pennello morbido e mozzetto, daine una volta per tutto 'l campo che hai a lavorare; e lascialo asciugare almen per un dì."

dants, and for various purposes. Take, then, a pound (or two, three, or four pounds) of linseed oil, and put it in a new pipkin; if it be a glazed one so much the better. Procure a small furnace with a round aperture, into which the pipkin should be nicely fitted, so that no flame may come up through the opening; for the fire would presently be attracted by the oil, and you would run the risk of burning the house as well. When you have prepared your furnace, put a moderate fire in it; as the more slowly the oil boils the better it will be. Let it boil till it be reduced one half; it will then be duly prepared. But, for mordants, add to it, when it is thus reduced, an ounce of liquid varnish (which should be good of its kind and clear) for every pound of oil. This oil is good for mordants.*

"C. XCII. *How to prepare good and perfect oil, by*

* "CAP. XCI. *Come tu dei fare l' olio buono per tempera, e anche per mordenti, bollito con fuoco.*

"Perchè delle utili cose che a te bisogna sapere, sì per mordenti sì per molte cose che s'adovra, ti conviene saper fare quest' olio; imperò togli una libra, o due o tre o quattro, d'olio di semenza di lino, e mettilo in una pignatta nuova; e s' è invetriata, tanto è migliore. Fa un fornelletto, e fa una buca tonda, che questa pignatta vi sia commessa a punto, che 'l fuoco non possa di sopra; perchè 'l fuoco vi anderebbe volentieri, e metteresti a pericolo l'olio, e anche da bruciare la casa. Quando hai fatto il tuo fornello, e piglia un fuoco temperato: chè quanto il farai bollire più adagio, tanto sarà migliore e più perfetto. E fallo bollire per mezzo, e sta bene. Ma per far mordenti, quando è tornato per mezzo, mettivi per ciascuna libra d' olio un' oncia di vernice liquida, che sia bella e chiara; e questo cotale olio è buono per mordenti."

baking it in the sun.—Oil may be prepared in another mode: it is thus more fit for colouring, nevertheless the fire is indispensable in preparing oil for mordants. Put linseed oil in a bronze or copper vessel, and in July or August keep it in the sun; and, if you leave it so exposed till it be reduced one half, it will be perfect for colouring [that is, colourless in itself]. In Florence I have found it to be of the best possible quality.*

" C. XCIII. *How to grind colours in oil, and to use them on walls.* — Grind every colour separately, as you did for working in fresco, except that, as you then ground them with water, you now grind them with this oil [that is, the thickened oil which has just been described]; and, when you have ground the various colours (for every colour can be used in oil except prepared lime), put them in small vessels provided for the purpose, either of tin or lead. If you cannot procure such, use glazed vessels, and in them place the colours which you have ground; keeping them in a box, that they may remain clean. Then, when you wish to paint a drapery with three gradations of colour in the

* " CAP. XCII. *Come si fa l'olio buono e perfetto, cotto al sole.*

"Quando tu hai fatto quest' olio, il quale si cuoce ancora per un altro modo (ed è più perfetto da colorire; ma per mordenti vuol essere pur di fuoco, cioè cotto), abbi il tuo olio di semenza di lino: e di state mettilo in un catino di bronzo o di rame, o in bacino. E quando è il sole lione, tiello al sole; il quale, se vel tieni tanto che torni per mezzo, è perfettissimo da colorire. E sappi, che a Firenze l' ho trovato il migliore e 'l più gentile che possa essere."

manner before explained, keep the tints separate, and with minever pencils lay them in their places, carefully uniting them; the colour being tolerably solid. Then leave the work for some days; and, resuming it when it is dry, go over the surface again as may be required. Paint flesh in the same manner, and any thing you may wish to represent, mountains, trees, or other objects. Provide a tin or leaden platter about the depth of a finger's breadth, like a lamp; half fill it with [common] oil, and keep your brushes in it, that they may not dry.*

"C. XCIV. *How to paint in oil on iron, on panels, and on stone.*—And in the same manner paint on iron, on any stone surface, or on panels; always

* "CAP. XCIII. *Siccome dei triare i colori ad olio, e adoperarli in muro.*

"Ritorna a ritriare, o vero macinare, di colore in colore, come facesti a lavorare in fresco; salvo dove triavi con acqua, tria ora con questo olio. E quando li hai triati, cioè d' ogni colore (chè ciascheduno colore riceve l' olio, salvo bianco sangiovanni), abbi vasellini dove mettere i detti colori di piombo o di stagno. E se non ne truovi, togli degl' invetriati, e mettivi dentro i detti colori macinati: ripongli in una cassetta, che stieno nettamente. Poi con pennelli di vajo, quando vuoi fare un vestire di tre ragioni, siccome t'ho detto, compartiscili e mettili ne' luoghi loro: commettendo bene l' un colore con l' altro, ben sodetti i colori. Poi sta alcun dì, e ritorna, e vedi come son coverti, e ricampeggia come fa mistieri. E così fa dello incarnare, e di fare ogni lavoro che vuoi fare: e così montagne, arbori, ed ogni altro lavoro. Poi abbia una piastra di stagno o di piombo, che sia alta d' intorno un dito, siccome sta una lucerna; e tiella mezza d' olio, e quivi tieni i tuoi pennelli in riposo, chè non si secchino."

giving a coat of size first. The same process is to be adopted for painting on glass, or on any other substance." *

It is plain that, as regards the mere methods, there is nothing in the above directions essentially different from those of Eraclius; and when Cennini remarks that oil painting was much employed by the Germans, he intimates that, at the time he wrote, it was less common in Italy. The terms "Tedeschi" and "Fiamminghi" were often used indiscriminately by the Italians, but the above allusion to the Germans (taken in either sense) can only be understood to refer to their practice in the fourteenth century. Had Cennini been indebted, however indirectly, to Van Eyck, his treatise would have contained some notice of an improved system, instead of a repetition of the formulæ which had been long received. The immixture of liquid varnish in boiled oil, he expressly says, was only intended to prepare it as a mordant. That he should speak of no dryer for the oil to be used in painting (whereas the later copy of Eraclius mentions white lead) may be explained by the difference of climate: and it is to be observed that the immoderate use of such materials, at a later period, in Italy, was confined to those painters who aimed at great

* "Cap. xciv. *Come dei lavorare ad olio in ferro, in tavola, in pietra.*

"E per lo simile in ferro lavora, e ogni pietra, ogni tavola, incollando sempre prima; e così in vetro, o dove vuoi lavorare."

expedition. Cennini indeed mentions both white lead and verdigris, but only as ingredients to assist the drying and consolidation of cements and mordants: of the strong siccative power of the latter he was well aware; for example, after describing a composition of boiled oil, varnish, white lead, and verdigris, he adds: "If you wish this mordant to last [that is, to remain adhesive] for a week before gilding, put no verdigris; if you wish it to last four days, put a little verdigris; if you wish the mordant to be good for a day only, put much verdigris." * He remarks that gilding preserved its lustre well upon it; probably because the air was excluded.

It is remarkable that, notwithstanding the general reference to flesh-painting, "e così fa dello incarnare," in Cennini's directions, there are no certain examples of pictures of the fourteenth century, in which the flesh is executed in oil colours. This leads us to inquire what were the ordinary applications of oil painting in Italy at that time. It appears that the method, when adopted at all, was considered to belong to the complemental and merely decorative parts of a picture. It was employed in portions of the work only, on draperies, and over gilding and foils. Cennini describes such operations as follows. "Gild the surface to be occupied by the drapery; draw on it what orna-

* Trattato, c. 152.

ments or patterns you please; glaze the unornamented intervals with verdigris [here used for the sake of the colour] ground in oil, shading some folds twice. Then, when this is dry, glaze the same colour over the whole drapery, both ornaments and plain portions."* Again: "Cover with silver foil the portion to be occupied by the drapery; draw the folds and ornaments after you have burnished the silver ground (for this burnishing is always necessary); glaze vermilion, mixed with yolk of egg, either over the unornamented intervals, or over the ornaments. Then, when this is dry, glaze fine lake, ground in oil, once or twice over the vermilion portions only, thus relieving crimson ornaments on a silver ground [or vice versa]."†

These operations, together with the gilt field round the figures, the stucco decorations, and the carved framework, tabernacle, or *ornamento* itself of the picture, were completed first: the faces (and hands), which in Italian pictures of the fourteenth century were always in tempera, were added afterwards, or at all events after the draperies and

* "Ad idem, mettere il campo d' oro, disegnarvi il lavoro che vuoi, campeggiare ne' campi d' un verderame ad olio; due volte aombrando alcuna piega; poi universalmente a distesa darne sopra i campi e sopra i lavori gualivamente." — *Trattato*, c. 143.

† "Ad idem, mettere il vestire d' argento; disegnare il tuo drappo quando hai brunito (chè così s' intende sempre) campeggiare il campo o vero lacci di cinabro temperato pur con rossume d' uovo. Poi di una lacca fina ad olio ne dà una volta o due sopra ogni lavorio, siccome laccio in campo." — Ib.

background were finished.* Cennini teaches the practice of all but the carving. In later times the work was divided, and the decorator or gilder was sometimes a more important person than the painter. Thus some works of an inferior Florentine artist were ornamented with stuccoes, carving, and gilding, by the celebrated Donatello, who, in his youth, practised this art in connexion with sculpture.† Vasari observed the following inscription under a picture. "Simone Cini, a Florentine, wrought the carved work; Gabriello Saracini executed the gilding; and Spinello di Luca, of Arezzo, painted the picture, in the year 1385."‡

Italian pictures belonging to the fourteenth and first half of the fifteenth century, frequently exhibit the partial oil painting above described. It is to be detected by the difference of surface; the portions covered with oil colour being more raised than other parts of the work. The preparation with yolk of egg, as in the last example quoted, would increase this appearance; but the oil alone, from the thickness of its consistence, causes a sensible inequality.§ The use of the gold

* "Ti conviene sempre lavorare in vestiri e casamenti, prima che visi." — *Cennini, Trattato,* cap. 145.

† Vasari, Vita di Dello.

‡ Ib., Vita di Spinello.

§ Several specimens of Florentine pictures with ornamented draperies, in the possession of Mr. Warner Ottley, exemplify the directions of Cennini.

and silver ground, in the mode directed, is evidently derived from the *auripetrum* and *pictura translucida* of the medieval writers before cited. Its latest modification appears in the works of Holbein and his contemporaries, and is thus described by De Mayerne. "Prepare a ground of silver-leaf; on this, when rendered perfectly smooth and in a manner burnished, glaze fine lake; when this is dry, add the folds with the same colour, deepened where necessary with a little black. A similar result may be produced with purified verdigris on a silver or gold ground. It is a very good method."*

The Venetian manuscript above-mentioned contains various notices on painting, mixed up, as usual, with medical formulæ. The directions relating to painting may be placed in the same category with those of Cennini; for, though transcribed early in the fifteenth century, the processes do not essentially vary from those of the preceding age†; the original work probably belongs, for the most part, to the beginning of the fourteenth century.

* "Belle façon de satin cramoysy que j'ai vu aux tableaux anciens de Henry VIII., Edouard son fils, et Marie sa fille, rois d'Angleterre (de Holbein, peintre). Couchez argent en feuille, sur laquelle, bien applany et fort egual comme bruny, glacez avec très belle lacque; et sur icelle, seichée, fais les plis avec lacque et enfoncez avec la mesme et un peu de noir. Je croy que le mesme se fera avec vertdegris distillé sur argent ou sur or. C'est un très beau labeur."

† For an account of the manuscript, with some specimens of its contents, see the note at the end of this chapter.

The chief peculiarities of the treatise consist in receipts for the preparation of water colours for painting on cloth; and in directions for painting and gilding on glass. The latter relate to mere varnishing, as distinguished from glass-enamelling by means of fire. Vasari observes that the French and Flemish glass-painters excelled in the latter art; and that it had been formerly the practice to paint the glass thinly with colours mixed in glutinous or other vehicles, which, he observes, offered but a feeble resistance to the air and rain. The following is a specimen of a firmer vehicle: it shows that the preparation of a strong drying oil by means of metallic oxides was not uncommon at the period when this treatise was written. Similar compositions for mordants under gilding, but not for painting, are to be met with in Cennini's treatise.

"To give a coating, in the Saracenic mode, over tin-foil used with glass.*—Take linseed oil; boil it in a well glazed pipkin; then add unground verdigris, in the proportion of half an oz. to a pound of oil; add also a small quantity of stag's horn that has been calcined to whiteness in a furnace, in an iron vessel. Let the oil and its ingredients boil till, if you put a dove's or hen's feather therein, it will curl with the heat. Thus boiled, remove it from the fire and let it settle; and, when you wish to

* The title is obscure; it is perhaps explained by the description, given in the next page, of the specimen from St. Stephen's Chapel. In that instance the coloured varnish was between the foil and the glass.

temper minium or any other colour which you may wish to glaze over glass, spread the tint with the oil above described, and let it dry in the shade. This coating can never be removed by water, nor by any other moisture whatever; and remember to keep your colours, or the coloured glasses, in a well shut press, that the dust may not spoil them."* A varnish elsewhere described in the MS. is the same composition (chiefly sandarac and linseed oil) which is to be found in all the older authorities subsequent to the age of the Lucca document.

In this recipe there are one or two points that may require explanation. The epithet "Saracinesca," in the title, is sometimes varied in the manuscript by "al modo di Damasco;" the ex-

* "A fare copta [coperta] saracinesca sopra lo stagnolo del vedro. — Toy olio di semēte de lino e ponilo a bolire ī una pignata bñ vidriata e īcontenēte mitili oz. ÷ de ℣deramo ītero sele livre una de olio[a] e mitili uno pezolo de cōno de osso de cervo bñ coto ī lo forno ī una pignata de fuoco tanto che sia bñ biancho e lasala tanto bolire lo p̄dc̄o olio cū le predicte cosse che se tu li poni una pena de colombo o de galina dentro con le penole esse si astriano. E coto levalo dal fuoco e lasalo sorare. E qñ tu vorai tempa lo minio o voy che altro colore te piace dare p copta del vedro cū lo pređto olio o da lo tuo colore e lasalo secare al ombra, e mai nō porai movere la dicta coperta per aqua ne per altra humidita che sia. Et nota tenere li toi coluri o li vidri coloūti ī uno armaro bñ ℣rato che la polvere nō teli guasti."— *Sloane MS.* 416.

[a] In a printed copy of this receipt in the *Secreti di Don Timotheo Rossello,* Ven. 1575, the corresponding passage is, "una onza di verderamo intiero, se sarà una libra di oglio."

pressions appear to refer to an Oriental mode of painting and gilding on glass by means of drying oils and varnishes. Many of the operations relate to the embellishment, in this mode, of glass pateræ and chalices "piadene e coppe;" but the use of transparent colours, without gilding, was applicable to the method of glass-varnishing for windows, to which Vasari alludes. Another mode, analogous to this Venetian art, was exemplified in some remains of painted glass found in St. Stephen's Chapel at Westminster. A fragment was examined by an experienced chemist (Haslam), and is thus described by him. "The specimen of painted glass you lately sent me,—a copy of which you have introduced in your work,—consists of verdigris, prepared with varnish, applied to the glass; immediately over which leaf-silver is laid, and upon that a cement to fasten it to the niche wherein it was inlaid. The green colour in this specimen appears fresh and perfect, which is owing to the exclusion of air, in consequence of the varnish employed and the coating of silver-leaf."* And, he might have added, in consequence of the glass itself, for the colour was within it; the silver-leaf merely protecting it from the damp of the wall, and, at the same time, enhancing the splendour of the colour.

* Smith's Antiquities of Westminster, London, 1837, p. 226. The pieces of painted glass above described were inlaid in the compartments of some large stone brackets which supported statues. (Ib., p. 243.)

In this instance the verdigris was used as a colour; but in the recipe above quoted it is introduced merely as a dryer without colouring the oil, since minium was tempered with it. The siccative ingredients ultimately employed in oil painting were originally used in mordants only; in this manuscript we have the intermediate stage. Verdigris, for example, in the sixteenth and seventeenth centuries, was common as a dryer in Italy and in Spain; and to its immoderate use is perhaps to be attributed the blackness of the shadows in some of the Spanish masters and in Tintoret.* The addition of calcined bones in the preparation of a drying oil is another instance of the existence, in very early times, of methods which have been sometimes announced as modern discoveries. A mode of rendering linseed oil clear and drying in twenty-four hours by means of calcined bones, was published in London by Grandi, in 1807, and was approved by the Society for the Encouragement of Arts. The trial of the heat of the oil by the feather is common in modern receipts.†

* The later Spanish painters considered it the best of all dryers. See Palomino, El Museo Pictorico, l. v. p. 56. That writer, aware of the tendency of verdigris to blacken, recommends that it should be restricted to the dark colours, and then used only in small quantity.

† De Mayerne observes that, if the feather curls with the heat, the oil is not duly prepared; but, if the feather undergoes no change (the heat being undiminished), the oil is sufficiently boiled.

The direction to let the composition "dry in the shade," after its application, occurs in other descriptions to be hereafter noticed. It is equivalent to saying that a dryer was used, and that the sun's heat was therefore unnecessary.

The application of oil painting to ordinary purposes, at the close of the fourteenth century, is exemplified by a document found at Königsberg. It relates to the painting in oil of the cover or door of a diptych; the picture within being probably executed in tempera. "Item, for the cover, over the picture, painted in oil colours, nine *Firdunge**," about 1*l.* 14*s.* 2*d.* The price indicates a work of no very refined art, but yet not of the commonest kind; the dates of the accounts in which this note appears extend from 1399 to 1409.

The Byzantine treatise before-mentioned was originally composed by Dionysius, a Greek monk and painter, of uncertain date. The present inhabitants of Mount Athos suppose that it was written in the tenth or eleventh century: its experienced editor, M. Didron, considers it much more modern.† Many of the directions contained in it are indeed evidently not older than the sixteenth century; but the probability is that the original treatise may have received additions from

* "Item vor dy decke obir dy toffel mit Olfarwe gemalt IX firdunge (etwa 11 Thlr. 9 Sgr. 6 Pf.)." —*S. A. Hagen, Kunst-Blatt*, 1835, p. 440.

† Manuel, &c., Introduction, p. xxxv.

time to time. Some of the records have internal evidence of antiquity. The ancient varnish, for example, is alluded to in the directions for cleaning altar-pieces, and the following mode of preparing oil, in the sun, is as old as Dioscorides. "Put some *péséri** in a copper vessel; expose it to the hot sun for forty days, only take care not to let it solidify too much; for some *péséri* acquires consistence rapidly, other samples more slowly. When it has the consistence of honey it will be duly prepared. If you were to suffer it to get thicker, you would no longer be able to mix it with other substances, or spread it upon images [pictures] without its forming lumps. You should be careful to cover it every evening, or to remove it into the house, for the night dew spoils it. When you find it in the fit state, pass it through linen to clear it from the flue or insects which may have got into it. You will thus have *péséri* baked in the sun."†

* A drying oil of some kind, probably linseed oil.

† "Comment il faut cuire le péséri. Prenez du péséri et mettez-le dans un large bassin de cuivre; exposez-le à un soleil ardent pendant quarante jours. Faites attention seulement à ne pas le laisser se coaguler trop solidement; car il y a du péséri qui se prépare très vite, et d'autre plus lentement. Lorsqu'il aura la consistance du miel, il sera bon; si vous le laissiez épaissir davantage, vous ne pourriez plus le mêler à d'autres substances ni l'étendre sur les images sans qu'il fît des grumeaux. Vous aurez soin donc de le couvrir tous les soirs ou de le rentrer à la maison, car la rosée de la nuit le gâte. Lorsque vous le verrez arrivé à un degré convenable, vous le passerez dans un linge pour le purifier des poils et

Examples of this process occur in later treatises: the chronological order which has been observed requires that these should be noticed elsewhere.

Being now arrived at the period when the great improvement in oil painting was effected by the brothers Hubert and John Van Eyck, it will be desirable to review the facts that have been collected relative to the previous history of the method. The "crassum oleum" mentioned in the earliest copy of Eraclius was applied to the same uses, and may have been as thick, as the *péséri* of the Greeks. In the Paris copy of Eraclius it is even observed, that "the longer the oil remains in the sun the better it will be." Such a mode of preparing oil, — reducing it to half its original quantity, as stated by Cennini, or to "the consistence of honey,"— converted it to a varnish of the most substantial kind; resembling those which could only be applied with the hand or with a sponge, as directed by Theophilus and other writers. The process in question, therefore, points to the remote times when oil was used, on works of art, as a varnish only. When we read of its being so used, it is always to be inferred that it had been prepared in the mode described; indeed, it would not otherwise have been fit to protect the surfaces on which

des insectes qui ont pu le salir, et vous aurez alors du péséri cuit au soleil." — *Manuel*, &c., p. 39.

It is to be regretted that the original Romaic is not given by MM. Didron and Durand together with their translation.

it was spread. The nut oil of Aetius, for example, must have been of this description; and it has been seen that the method of thickening and bleaching oil in the sun was known and practised long before his time. The sesamine oil, if employed as a varnish in the East, must be previously reduced to a like consistence, either by long exposure to the air, or by the addition of drying ingredients; as it appears that even olive oil was so thickened by the ancients for medical and other uses. The Egyptian cicinum, described as a varnish in the *Mappæ Clavicula*, and probably used as such anciently, in warm climates, is of similar quality. Such being the necessary consistence of oils when employed as varnishes, it is quite conceivable that, when oil painting was first attempted, the tints would be prepared with the customary inspissated medium. The examples that have been adduced leave no doubt on this point. Transparent lackers had already been applied with thick varnishes at least as early as the eighth century; and in the transition to oil painting, more strictly so called, the appearance and qualities of a varnish were still retained.

Colours ground in such a vehicle were almost unavoidably spread in flat tints only. The surface of the painting was glossy; an appearance which the early oil painters seem to have considered indispensable. The cause of the "sinking in" of colours was soon known and guarded against; for, when the

work was to receive more than one coat, care was taken that the first painting should be quite dry, even by exposure to the sun, before the second was applied. The surface of stone, after being dried in the same way, or by means of fire, was sometimes covered with size, to intercept all internal cause of alteration in the superposed shining liniment. The surface of wood was required to be perfectly free from damp for the same reason; and, this precaution being observed, one coat only of the thickened oil on hard woods (though more were generally given) insured the glossy appearance. St. Audemar, after describing the tinting of box-wood with saffron, used as a water colour, adds: "If you wish the wood to shine, let the yellow colour dry first; then go over the surface with the same colour mixed with oil*;" that is, with inspissated oil. An English painter of the seventeenth century, with different views but with the same experience, observes: "Never temper your colours with fat oyl, for that will make your colouring look greasy."† The passage in St. Audemar shows that the use of oil colours was originally considered sufficient to produce a shining surface, as opposed to the effect of water colours. As regards the result, without at present

* "Si volueris ut ipsum lignum luceat, permitte prius crocum siccari; postea cum oleo eum super illum pone."

† MS. on Painting by John Martin (1699), in Sir J. Soane's Museum.

considering the change of means, the habit was retained by the Van Eycks; and may be said to have always more or less characterised the schools of the Netherlands as distinguished from those of Italy.

Paintings entirely executed with the thickened vehicle, at a time when art was in the very lowest state, and when its votaries were ill qualified to contend with unnecessary difficulties, must have been of the commonest description. Armorial bearings, patterns, and similar works of mechanical decoration, were perhaps as much as could be attempted. Hence it is not to be wondered at that the more important parts of pictures, such as faces, extremities, and undraped portions of figures generally, should be executed in tempera: or that the prejudice against oil painting, from its assumed unfitness for all delicate operations, should have lasted in Italy for some years after the method of Van Eyck had been made known.

The distinct evidences respecting the nature of the medium employed in the infancy of oil painting may explain less direct allusions. The nut oil used, or attempted to be used, by Giorgio d'Aquila was not "sufficiens in pictura." As before shown, this expression could not relate to the quantity; but, if we consider it with reference to the method that prevailed at the time, the passage may be understood to mean that the oil had not sufficient body, and was not sufficiently thickened

and oxygenated by the action of air and light. This is further proved by the circumstance of its having been still fit for culinary purposes, though it was considered ill adapted for painting.

To the general system above described the unsuccessful oil painting of Theophilus is also perhaps to be considered an exception. There is no evidence that the oil employed by him had undergone the usual treatment, and it appears, moreover, to have been ill prepared at first. The tedious drying, which was the result, would have been obviated in a great degree by using the oil in the mode generally practised; a mode to which, with all its inconveniences, the early painters learned to accustom themselves. The "oleum pictorum" mentioned in the Westminster account-rolls was probably a thickened oil.

Was there no endeavour, it may be asked, to dilute this half-resinified substance with an essential oil? Such a resource is indeed indicated in the Byzantine manuscript, but its date is uncertain; and, from the absence of any similar notice in early documents, it is to be inferred that the practice was borrowed from the schools of Central Italy, where it was common, in the sixteenth century. The method consisted in mixing naphtha with the thickened *péséri*, when used with concrete pine resin as a varnish.* The effect of essential

* Manuel, &c., p. 40. 54.

oils, in painting, especially if they are well rectified, is to produce a dull, unshining surface, called by house-painters *flatting;* this is of itself a reason why the early oil painters, with the prejudices they entertained, were not likely to employ such diluents. The thick consistence of the vehicle was not corrected in Cennini's time; he clearly directs the colours to be ground in the sun-baked oil, and speaks of no mode of thinning either the tints or the medium.

These great inconveniences were counterbalanced by some supposed advantages. The glossy surface, when thoroughly dry (and it was always dried, if possible, in the sun), harboured little dust, and was easily cleaned. Viewed in this light, the vehicle possessed at least equal recommendations with a durable lacker for furniture and implements; and, in the Venetian manuscript, such a varnish is described as applicable to "pictures and cross-bows."* Other merits were more real, and the experience acquired was sometimes remembered and applied in the best ages of painting. The half-resinified oil was well calculated to exclude air from the colours, or, in the painter's phrase, to "lock them up." Accordingly, when, in the early treatises, we read that certain colours required to be ground in oil in order to last, it is always to be remembered that the thickened oil is meant. In

* "A fare vñixe da depinture e da balestre."

the Venetian manuscript, for example, we read: "Grind the said colours in water on the stone, and then temper them with yolk of egg well beaten, or, if you please, with [thickened] linseed oil; indeed verdigris requires to be ground with this oil in order to preserve its colour." * Leonardo da Vinci, who used oil, as a medium for pigments, in the thinnest state, observes (apparently on the contrary, but quite consistently) that verdigris is evanescent as a colour unless it be immediately varnished.† The oil used at an earlier period was, as we have seen, itself a varnish. Thus protected, yellow lakes were employed; and, although some of these are more or less affected by light as well as air, the exclusion of the latter at least was beneficial: the tendency of the oil itself to become yellow, rendered the vehicle fittest for those colours which would be least affected by the change.

The oil, when thickened by exposure to the sun's heat, and when duly prepared, had also a greater drying tendency; for the inspissation so induced is a degree of that oxygenating process which ends in the solidification of the oil. This rendered it fit for the darker colours with or without the addition of varnish, according to its consistence.

* "Maxina li diti coluri cũ l' aqua suxo la pietra e poi tempali como el torlo de l' ovo bñ sbatuto o voi como olio de señte de lino. Vero e che 'l ℣deramo vole esš maxinato cō questo olio de señte de lino a volere che nō p̃di suo colore."

† Trattato, &c., p. 124.

The dryers, employed from the earliest times in mordants, were added when necessary. Such a thickened or oleo-resinous vehicle was still used by most of the Italian painters (even after the general practice had changed) for dark colours. In Italian oil pictures executed at the close of the fifteenth and beginning of the sixteenth century, the darks are, on this account, frequently more prominent than the thinly painted lights. The correction of the acid which rancid oil contains (and which may have a tendency to check the siccative quality of the oil) was provided for by the process indicated in the later transcript of Eraclius, or by methods similar in their results. The inspissated oil had another advantage, the only one perhaps which has recommended it in modern times: though nearly reduced to the state of a liquid resin or balsam, it was found to preserve its toughness much longer than such vehicles. It was, therefore, used by some of the Flemish and Dutch masters in shadows (for example, in trees); and may be detected in rich darks, which, notwithstanding their substance, exhibit no tendency to crack.

Thus it appears that, about the year 1400, the practice of oil painting, however needlessly troublesome, had been confirmed by the habit of at least two centuries. Its inconveniences were such that tempera was not unreasonably preferred to it for works that required careful design, precision, and completeness. Hence, the Van Eycks and the

painters of their school seem to have made it their first object to overcome the stigma that attached to oil painting, as a process fit only for ordinary purposes and mechanical decorations. With an ambition partly explained by the previous unavoidably coarse applications of the method, they sought to raise the wonder of the beholder by surpassing the finish of tempera with the very material that had long been considered intractable. Mere finish was, however, the least of the excellencies of these reformers. The step was short which sufficed to remove the self-imposed difficulties of the art; but that effort would probably not have been so successful as it was, in overcoming long established prejudices, had it not been accompanied by some of the best qualities which oil painting, as a means of imitating nature, can command. Before entering on this more interesting part of the inquiry, some documents relating to the general practice of art in England and elsewhere, during the fourteenth century, deserve to be noticed.

NOTE

ON A VENETIAN MANUSCRIPT IN THE BRITISH MUSEUM.

Sloane MSS. 416.

The title, written in the first leaf by a former possessor is as follows. "Receitts and directions in curing diseases, dyeing, making glass, sope, &c., most part in Italian ; medicinæ Roberti Theotonici."

Some receipts are in Latin. The name Robertus, which does not occur in the book, seems to be erroneously copied from the following passage in the manuscript. "Oleū p̄ciosissimū cōtra oīa contraria hūc nature seč [secundum] frēm Albertū Theotonicū." The designation Theotonicus (Teutonicus), or German, was sometimes applied to Albertus Magnus. That celebrated personage is distinctly mentioned elsewhere in the manuscript as having taught the mode of preparing a certain blue colour. "Lazurū seč dōtñas Alb̄ti Magni ordinis fratrū p̄dichatorum," &c.

Another receipt is thus headed: "Ad faciendū lazurū cum q̄ potēis pinḡe ī muris et pictib̄. [pictilibus] secundū fratrem Paulum ordinis fratrū minorū." The ancient altar-piece of St. Mark's, at Venice, was painted by a "Magister Paulus." (*Lanzi, Storia Pittorica*, Fir. 1822, vol. iii. p. 11.) A picture at Vicenza, mentioned by Della Valle (*Lanzi*, ib.) was inscribed, "1333. Paulus de Veneciis pinxit hoc opus." A monk of this name, and of the order (Minor Franciscans) mentioned in the MS., is also noticed in connexion with early works of art in Venice, in the following extract from a public record at Treviso, dated 1335. The passage is quoted in Guid' Antonio Zanetti's *Nuova Raccolta delle Monete e Zecche d' Italia*,* vol. iv. p. 151. "Maestro Marco, a painter who dwells in Venice with the Frati Minori, executed the pictures on cloth in the German method, which are at Treviso in the church of St. Francis, belonging to the Frati Minori; (similar

* Bologna, 1775. The work is noticed by Lanzi, vol. i. p. 151.

pictures on cloth are in Venice, in the establishment of the Frati of the same order). In the same place are some glass windows by the hand of the said Maestro Marco, which are well executed. For, a certain German friar executed all those works formerly at the convent in Venice, and Maestro Marco copied and sent them to Treviso. The aforesaid Marco has a brother named Paolo, a painter, dwelling in the same convent, who has [executed] drawings of the death of St. Francis and of the glorious Virgin, as they are painted in the German method, on cloth, at the convent of the Frati Minori at Treviso." *

As stated in the foregoing pages, the notices connected with the arts, in the manuscript in question, relate chiefly to the preparation of materials for painting in water colours on cloth; and to glass-painting. To these circumstances are to be added the coincidence of the name "Frater Paulus ordinis fratrum minorum;" and the fact of the manuscript being in the Venetian dialect. But the above extract is important, independently of the object for which it is quoted, as exemplifying the early influence of the Germans on Venetian art. The "frater Theotonicus," whoever he was, is spoken of in 1335, as having *formerly* introduced his methods into Venice: he was therefore at least coeval with Giotto, who died in 1336. In the next chapter some further evidence will be adduced respecting the early use of cloth instead of wood, for painting, in Venice and in the North of Italy.

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* "Et nota quod magister Marcus pictor qui moratur Veneciis penes locum fratrum Minorum, fecit panos Theotonicos qui sunt Tarvisii ad sanctum Franciscum Minorum; qui pani sunt picti etiam Veneciis in loco fr̃ Minorum: et sunt ibi fenestre vitree facte manu dicti magistri, et bene facte. Nam quidam Frater Theotonicus fecit omnia ab antiquo ibi in Veneciis, et Mag̃r Marcus exemplavit et misit Tarvisium. Et nota quod supradictus Mag̃r Marcus pictor, qui moratur penes Sanctam Mariam fratrum Minorum de Veneciis, habet unum fratrem, nomine Paulum, pictorem, qui moratur penes dictam Sanctam Mariam fr̃ Minorum: qui habet in carta designatam mortem Sancti Francisci, et Virginis gloriose, sicut picte sunt ad modum Theotonicum in pano ad locum Minorum in Tarvisio."

To return to the manuscript. The date of the original compendium may, on the above grounds, be placed in the first half of the fourteenth century. The date of the interpolated copy in the British Museum is more easily determined. One portion, unfortunately imperfect, is transcribed in a small neat hand, and appears to be extracted from an older manuscript; other passages, collected from similar sources, or recording original observations, are written by the compiler of the book; apparently an English monk studying at Padua or Venice, as his Italian is always in the Venetian dialect. A large proportion of the receipts are medical and alchemical; and it is to be regretted that a later possessor of the volume, probably a medical student of the 17th century, has defaced it with English titles, some of which might have been spared.

The English compiler was in Ferrara in 1424; in 1454 he left Bologna and proceeded to Milan; the latest date is 1456. The following is the passage in which the first date occurs. The traveller, like most of the friars of the period, pays particular attention to the art of illuminating; receipts relating to such details are very numerous. In describing a mode of executing initial letters raised and gilt, he remarks: "The person who first invented this receipt was a Dominican friar called Fra Maso da Urbino, an illuminator. He used no other composition." And, in conclusion: "This receipt was tried by the above-named friar in Ferrara, in the church of S. Domenico, in my presence, on the 12th of June, 1424, and I wrote the description with my own hand. Remember to breathe on the composition before you lay on the gold." * The last sentence is added as a postscript.

Various passages in this manuscript prove that the art of etching was understood and practised long before it occurred

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* .... "questa reçeta el primo homo che la fieçe mai si fo uno frate de Santo Domenigo chiamato p̃ nome Fra Maxo da Orbino et quale frate era aminiadore, ed elo nō adovrava altra sixa se no questa.....e questa reçeta fo provada dal dito frate in la çita de ferara in la Giexia di Santo Domenigo siando mi presente a di XII. de zugnio 1424, ed mia mano ꝑpia la schrissi. Rachordate de refiadar con la bocha sopra lo lavoriero avanti che miti l' oro suoxo."

to the monks, or to Maso Finiguerra, to take impressions from plates. For example : "To prepare a powder for engraving on iron.—Take Roman vitriol [sulphate of iron] * 1 oz., corrosive sublimate 1 oz., nitre ½ oz., verdigris ½ oz.; reduce these to a fine powder ; then take your iron plate and cover it with liquid varnish ; dry it at the fire, and afterwards draw on it what you wish to engrave. Take wax and make a hedge round your drawing ; pour very strong vinegar within it, and then add the before-mentioned powder, leaving it till the desired effect is produced." † Elsewhere the preparation of liquid corrosives, under the name of aqua fortis (but not exactly corresponding with the usual nitric acid), is described, "for engraving on iron."

Other extracts relating to various processes, remaining to be exemplified, will be given elsewhere. A few of the receipts in the manuscript were published at Venice in the sixteenth century, in the *Secreti* of Timotheo Rossello. An example has been already given. This instance shows how ancient the sources were whence such printed collections were derived.

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* The term "Roman Vitriol" is commonly applied, in this country, to sulphate of copper ; but an Italian chemist and writer on painting speaks of it as synonymous with sulphate of iron. See Marcucci, Saggio Analitico-chimico sopra i Colori minerali, &c., Roma, 1816, p. 58.

† "A fare polvere da chavare fero.—R. vedriolo romano oz. una, ariento sulima oz. una, salnitro oz. ÷, verderamo oz. ÷, e possa pista ogni chossa sotilmente, e poi to el to fero e mitege suxo vernixe liq̃da e poi sechalo al fogo, e quando sera secho desegniage sovra q̃lo che te piaxe de chavare e quando araj desegniato torai dela cira e farage dintorno le sponde a quelo designam̃to e poi aibi de laxedo ben forte e mitegene suxo e possa sopra laxedo mitege le dite polveri e lassala stare tanto che el te vegniera fato."

CHAP. V.

PRACTICE OF PAINTING GENERALLY DURING THE FOURTEENTH CENTURY.

As long as painting continued to be practised chiefly in the cloister, its methods, if not its style, were in a great measure common to the Christian world; the technical modifications which it underwent being mostly referable to the differences of climate. To this last cause may be attributed the greater prevalence of oil painting in the North, as compared with Italy; a fact established by the observation of Cennini that "the Germans employed it much;" by the early and abundant use of oils and varnishes in England, as recorded in the account-rolls of the thirteenth and fourteenth centuries; and by the important circumstance of the great improvement in oil painting (ultimately leading to its general use) having been first made in Flanders. All which is sufficiently explained by the necessity of counteracting the effects of a humid atmosphere on painted surfaces, by hydrofuge or oleo-resinous preparations. Among other methods, common on this side of the Alps, may be mentioned the cloth-painting of the English and Germans, and their peculiar process in tempera.

English and German Mode of Painting on Linen.

In the Treviso record, preserved by Guid' Antonio Zanetti, mention is made of a German mode of painting (in water colours) on cloth.* This branch of art seems to have been practised on a large scale in England during the fourteenth century, so as to attract the notice of foreigners. The following passages occur in Le Begue's copy of the MSS. of Alcherius. "Item, in the same original it was thus written: 'On Tuesday, the 11th of February, 1410, I caused a copy to be made in Bologna of certain receipts lent to me by Theodoric of Flanders, an embroiderer accustomed to work at Pavia, ... which receipts the same Theodoric said he had obtained in London, in England, from the artists who used the water colours hereinafter described.'"† The receipts, which are in French and Latin, relate to the preparation of lake, indigo, green, and other tints. Among these we find the violet, "tournesol;" not, in this case, the lichen Roccella tinctoria, but the Croton tinctorium.‡ The

* See the note at the end of the last chapter.

† "Item in eodem exemplari in quodam alio quaterno precedentibus contiguo scribebat sic. 1410 die Martis XI., Februarii feci copiari in Bononia a receptis ibi imprestatis per Theodoricum de Flandria rachamatorem solitum operari in Castro Papie... quas receptas idem Theodoricus dixit habuisse in Londonia in Anglia ab operariis infrascriptarum aquarum."

‡ The preparation of a blue colour from the "torna sole" is described in the Venetian MS., where a rude drawing of the

transcriber resumes: "After the above, it was thus written in the said original: 'The aforesaid Theodoric, from whom I had these receipts, said that in England the painters work with these water colours on closely woven linen saturated with gum water. This, when dry, is stretched on the floor over coarse woollen and frieze cloths; and the artists, walking over the linen with clean feet, proceed to design and colour historical figures and other subjects. And because the linen is laid quite flat on the woollen cloths, the water colours do not flow and spread, but remain where they are placed; the moisture sinking through into the woollen cloths underneath, which absorb it. In like manner, the outlines of the brush remain defined, for the gum in the linen prevents the spreading of such lines. Yet, after this linen is painted, its thinness is no more obscured than if it was not painted at all, as the colours have no body.'" *

plant is given. The writer observes that those portions of the colour which are not suffered to come in contact with lime assume a violet hue. The lichen is mentioned elsewhere in the MS. under the name of *roxello*.

* "Post super dicta, scriptum sic erat in præfato exemplari: Antedictus Theodoricus a quo habui antescriptas receptas præscriptarum aquarum, dixit quod in Anglia operuntur operarii pictores cum ipsis aquis super tellis bene contextis et balneatis cum aqua gummata de gummi arabico, et siccatis et postea extensis super solario per terram super drappis grossis lane et frixie incedentes cum pedibus nitidis ipsi qui operantur intus, inde desuper ipsas telas operando et depingendo super ipsas imagines historicas et alia; quia ipse telle sedent et stant in

It is remarkable that a native of Flanders, not unacquainted with art, should notice this practice in England, and record the process and materials; for the inference is, that the peculiar method which he describes was not practised in his own country at the period in question. In the beginning of the fifteenth century, the ordinary tempera painting on cloth was certainly common in the Netherlands; rooms being then, as Van Mander states, frequently hung with large works of the kind (executed with egg and size colours), instead of tapestry. He remarks this when speaking of Roger of Bruges, a scholar of Van Eyck, and continues: "I have seen such hangings at Bruges, which I am inclined to think were executed by him. Considering the time when they were done, they are surprising productions, since, in large works, drawing, and knowledge (of the figure) are required."*

planitie extense ut dictum est; et super dictis drapis dicte aque colorate pingendo non fluunt se spargentes sed stant ut ponuntur, et humiditas aquea descendit in drapo lanne qui eam bibit. Ac etiam non sparguntur tractus pincellorum facti ex ipsis aquis quod gummacio tele facta ut dictum est, prohibet sparsionem ipsam tractuum pincellorum, et cum tele ipse operate sunt tamen raritas ipsorum non est suspicata nec obfuscata, plus quam si non picte fuissent, quia aquei colores superscripti non habent tantum corpus quod possent suspicare raritatem in tella." The orthography is preserved in the above extracts.

* "In desen tijt had men de maniere te makē groote doecken, met groote beelden in die men ghebruyckte om Camers mede te behangen, als met Tapijtserije, en waren van Ey-verwe oft Lijm-verwe ghedaen. Hier in was hy [Rogier van Brugge] een goet meester: en ick meen wel van hem te

The peculiarity of the English method appears to have been its absolute transparency; and this same quality distinguished a German mode of painting on cloth, even in the beginning of the sixteenth century, from the Italian tempera. A drawing sent by Albert Durer to Raphael, is described by Vasari, as having been painted "in water colours on a fine linen cloth, which showed the transparent lights on both sides, without white; water colours only being added, while the cloth was left for the lights; which thing appeared wonderful to Raphael."*

The Venetian MS., probably derived from the "frater Theotonicus" mentioned in the Treviso record before quoted, contains directions for the preparation of transparent colours for painting on cloth.† The method thus indicated points to the origin of some technical peculiarities observable in the North of Italy. Various works of the Venetian, Paduan, and Milanese artists were executed at a

Brugge einige van dese doecken gesien te hebben, die wonderlijch (nae den tijt) te achten en te prijsen waren: want soo in 't groot wat te doen, daer moet teyckeninge en verstandt by zijn," &c. — *Carel Van Mander, Het Schilder-Boeck*, &c., Haerlem, 1604, p. 203.

* Vasari, Vita di Raffaello.

† For example: "A fare aqua negra da lavorare ī pano.— Aqua da fare rosso in pano.—Aque rosse da lavorare ī pano biancho.—A fare aqua çala [gialla] da lavorare suxo el biancho," &c. The meaning attached to the word "lavorare," throughout the MS., shows that the operation was distinct from mere dyeing.

later period in thin tempera on fine linen; and, though not quite transparent, had much less body than the tempera pictures on cloth of other Italian schools. The studies of Squarcione* were occasionally made on this material; as were those of Leonardo da Vinci, Luini, and others connected with the Milanese school.† The early predilection of the Venetians for painting on cloth generally, rather than on wood, was, as Vasari observes, an exception to the Italian practice. Jacopo and Gentile Bellini, he remarks, executed their first pictures on cloth.‡ The German (Theotonicus) who introduced the method in Venice early in the fourteenth century, may thus have been the means of familiarising the artists of the neighbourhood, and of the North of Italy, with the use of that material, which, still distinguished by the fineness of its texture, was often employed by them even for their oil pictures.

As regards the English and German paintings on cloth, there can be little doubt that the thinness of execution for which they were remarkable, though it did not preclude gilding, was adopted with a view to durability. Sandrart affirms that the ordinary (more solid) tempera had been found not to last

* Vasari, Vita di Andrea Mantegna.

† Vasari observes of Leonardo, "Si metteva a ritrargli sopra a certe tele sottilissime di rensa o di panni lini adoperati."—*Vita di Lionardo da Vinci.* A work, by Luini, of this description was lately in the possession of Mr. Buchanan.

‡ Ib., Vita di Jacopo, Giovanni, e Gentile Bellini.

in the Netherlands*; meaning that it was affected by damp. Accordingly, although size painting was much practised there at a later period, it was employed either for temporary purposes of decoration, or for cartoons to be transferred to tapestry.

The Anglo-German method appears, from the description, to have been in all respects like modern water colour painting, except that fine cloth, duly prepared, served instead of paper. On inflexible materials, on walls, and on wood, the early English artists, and those of the Rhine, used a more solid tempera, but which was still different from that commonly employed in Italy. The priority of records respecting the vehicle is in favour of England; indeed, from a passage in an early manuscript, it may be inferred that the process, such as it was, had been borrowed by the Germans from this country.

English and German Tempera.

Before entering on this subject, it may be necessary to explain the different meanings of the word *tempera*, applied to more or less liquid compositions. First, it is used in the general sense of mixture, in accordance with the import of the classic expression "temperare" (thus Pliny, "temperare unguentum"). In this widest application the Italian substantive "tempera" means any more or less fluid medium with which pigments may be mixed, in-

* Teutsche Academie, part i. p. 66.

cluding even oil. Hence Vasari says, "l' olio che è la tempera loro." * Secondly, in a less general sense, the term represents a glutinous, as distinguished from an unctuous or oily, medium; and thus comprehends egg, size, and gums; or, in a more general expression, binding substances originally soluble in water. Lastly, in its most restricted and proper acceptation, it means a vehicle in which yolk of egg is a chief ingredient: the varieties being, yolk of egg mixed in equal quantities with the colour; yolk and white of egg beaten together, and diluted with the milky juice expressed from the shoots of the fig-tree; and the yolk alone so diluted.† These last-named vehicles were the most commonly used by the painters of the South of Europe, before the invention and improvement of oil painting. They are described by the chief Italian writers on art, and by those who have followed them. Sandrart intimates that tempera was still employed in his time, but observes that it was only fit for dry situations.‡

Of the antiquity of the egg vehicle for the purposes of painting there can be no doubt, as Pliny speaks of the application of colours tempered with it on walls. § The mixture of yolk of egg with the fig-tree juice is mentioned by the same writer, but with reference to medicinal purposes only. ‖

* Vasari, Introduzione, c. 21.

† Cennini, Trattato, c. 72. cap. 145. Vasari, Introd. c. 20.

‡ Teutsche Acad., part iii. p. 17., part i. p. 66.

§ L. xxxv. c. 26. ‖ L. xxiii. c. 63.

The fig-tree juice is noticed, in combination with other ingredients, by medieval writers on painting; for example, in the Lucca MS. and in later treatises: a mode of procuring it is described in the *Secreti* of Rossello.* Its omission in the Byzantine MS. is probably accidental, as it is used by Greek painters of the present day. Dioscorides and Pliny remark that the juice of the fig-tree is of the nature of vinegar, and that it coagulates milk.† The modern use of vinegar, as a substitute for this juice, to dilute the yolk of egg in painting, is perhaps derived from these authorities. The tempera, composed of egg and fig-milk, or egg alone, used in dry climates, has been found to attain a very firm consistence, so as to withstand ordinary solvents.

Such was the nature of the Italian tempera properly so called. On walls, and for coarser work, warm size was occasionally used; but the egg vehicle, undiluted, was preferred for altar pictures on wood. Thus used, and drying quickly, it was difficult to effect a union of tints in the more delicately "modelled" parts of a work, — for instance, in the flesh, — without covering the surface with lines (tratteggiare; Anglice, hatching) in the manner of a drawing: Vasari indeed assumes that tempera pictures could not be executed otherwise.

* Della Summa de' Secreti universali, Ven. 1575, vol. i. p. 127.

† Diosc. l. i. c. 183. Plin. l. xxiii. c. 7.

Examples of works, painted with the egg vehicle, being rounded and duly finished without this laborious process, are certainly not common in Italy. The pictures of Gentile da Fabriano and Sandro Botticelli are among the rare exceptions*; an early specimen of Perugino, in the National Gallery, exhibits the dryer method.

The productions of the still older Rhenish painters, on the contrary, are softened and rounded with scarcely any appearance of this hatching: the ancient altar-piece in the cathedral of Cologne, by Meister Stephan, may be cited as an example. It had been long concluded that the painters whose works in tempera exhibit this union of tints must have employed a vehicle which did not dry rapidly, but allowed time to blend the colours at will. Vasari and other writers suggest a mode of securing this union on cloth, by sponging the back of the picture, and thus arresting the drying till sufficient finish is attained†; but they

* A specimen of Gentile da Fabriano in the collection of Mr. Warner Ottley is remarkable for the fusion of the tints. It is also an example of the partial oil painting in drapery, described by Cennini. (See the last chapter.) The patterns are painted with vermilion, and glazed with lake mixed with oil; the ornaments below are also in oil. The surface of the portions so treated is, consequently, somewhat more raised than that of the rest of the work. A picture by Sandro Botticelli, in the collection of Mr. Solly, executed entirely in tempera, has the same union of tints with much more body.

† Vasari, Introd. c. 25. Armenini, De' veri Precetti della Pittura, Ravenna, 1587, l. ii. c. 8.

do not allude to any expedient for producing the same result on the surface of wood or of walls. It is also evident from the appearance, above described, of most of the Italian tempera pictures, that no such method was commonly practised.

The Italian painters, though attentive to the preparation of materials with a view to the durability of their works, seem to have made it no part of their study to lessen executive difficulties. Their ambition was to overcome such difficulties by superior skill, rather than by mechanical contrivances. Thus fresco, ultimately, was proposed to be executed without retouching. As if on the same principle, the tempera which was found to dry too fast for the less expert designers of the North, was retained by the Italians in a climate where it dried still faster.

The general omission, by transalpine painters, of the juice of the fig-tree in the tempera vehicle (from the difficulty of procuring it, in colder climates, in sufficient quantity) is unimportant, as its use was by no means universal, even with the Italians. The mode in which the German and English artists retarded the drying of their vehicle, appears to have been by means of an ingredient which has re-appeared in our times in the manufacture of water colours; viz., the addition of honey. Vasari speaks of the immixture of honey with gold-leaf ground in gum water*; it is also mentioned in the Venetian

* Vasari, Introd. c. 28.

MS., among the ingredients of mordants for gilding.* This is the only approach to the transalpine practice which is to be met with in the earlier Italian writers. Still, such allusions indicate an acquaintance with the material for the purposes of painting, and may account for the union of tints observable in the excepted cases before noticed. The practice of mixing a small quantity of honey in grounds or primings, to preserve canvasses in a flexible state, is now common in Italy (and is certainly not to be recommended), but does not appear to be very ancient. A similar process is indeed described in the Byzantine MS.; the date, however, must in this instance be considered uncertain. The use of honey, for the object above mentioned, by the Rhenish and English tempera painters is proved by existing documents.

A MS. (on medical and other subjects) in the public library at Strassburg† contains some directions for the preparation of colours and vehicles, among which the ingredient in question is named. The handwriting of the treatise is of the fifteenth century‡; but older authorities are quoted, and the

* "A fare filitj doro ī charta to serapin e mitelo amoio ī lo axedo forte p̃ una note e mitege dentro alguna cossa de mielle e de biacha p̃ darge alguno corpo," &c.—"To make fine lines of gold on paper, take gum sagapenum, and let it dissolve in strong vinegar for one night, then add a little honey and a little white lead to give it body."

† The MS. is marked A. VI. No. 19.

‡ Such is the opinion of Director Passavant of Frankfort.

practice generally described may belong even to the early part of the fourteenth century. Honey is repeatedly mentioned for uses similar to those indicated in the Venetian MS.; the following passage is distinct as to its employment in painting: —

"I have now honestly, and, to the attentive, amply taught how all colours are to be tempered, according to the Greek practice, with two aqueous vehicles; also, how the colours are to be mixed, and how each colour is to be shadowed: [I have told] the whole truth. I will now teach how all colours may be tempered with size, on wood, on walls, or on cloth; and, in the first place, how the size is to be prepared for the purpose, so that it shall keep without spoiling, and also without an unpleasant smell. Take parchment cuttings, and, after washing them well, boil them in water to a clear size, neither too strong nor too weak. When the size is sufficiently boiled, add to it a basinful of vinegar, and let the whole boil well. Then take it from the fire, strain it through a cloth into a clean earthenware vessel, and let it cool. Thus prepared, it keeps fresh and good for a long time. The size being like a jelly, when you wish to temper any colours, take as much size as you please, and an equal quantity of water; mix the size and water together, and likewise much honey with them. Warm the composition a little, and immix the honey thoroughly with the size. With this

vehicle all colours are to be tempered, neither too thickly nor too thinly, like the other pigments of which I have already spoken. And these colours can all be coated with varnish; thus they become glossy, and no water or rain can then injure them, so as to cause them to lose either their tints or their shining appearance." *

There is evidence to show that this receipt describes the practice of the English artists at a very early period, though that practice is here

* "Nu han ich redelich und merkelichen wol gelert wie man alle varwen tpieren sol noch kriegeschem [nach Griechischen] sitten mit zwein wassern und wie man uff iedie varwe schetwen sol die gantze warhheit. Nun wil ich leren wie man alle varwen mit lim tpieren sol uff holtz oder uff muren oder uff tüchern. Und zu dem ersten wie man den lim dar zu bereiten sol das er lange wert und nüt ful wirt und ouch nüt übel smekent wirt. Nim bermit schaben und wesche die vorhin schön mit wasser und süde dar under ein lutern lim weder ze stark noch ze krank und wenn der lim ze hant gesotten ist so tu ein schüssel vol essichs darin und las das wol erwallen und tu in denn ab von dem für und sige in durch ein tuch in ein schön geschirr und setz in do er kül habe. So belibet er lang frische und gut. Ist der lim gestanden als ein galrein und was varwen du wilt tpier so nim limes als vil du wilt und ouch als vil wassers als des limes si und müsche den lim und das wasser under enander und ouch vil honges dar under und werme das enwenig und zertrib das honig gar wol under den lim und do mit sol man alle varwen tpier weder ze dik noch ze dünne als die andren varwen von den ich vor han geseit und dis varwen mag man ouch alle wol über strichen mit virnis so werdent si glantz und mag ienien niemer kein wasser noch regen schaden das si ir varwe noch ir glantz nüt verlierent."

dignified with the epithet "Greek." * An English document, in which the same ingredient is mentioned in connexion with materials for painting, belongs to the latter half of the thirteenth century. The notice occurs in an account of expenses relating to works executed by "Master William" at Westminster, and in the Mews at "La Cherringe" (Charing). The Mews, it is to be observed, formed a large establishment where the king's falconers resided; containing, besides their dwellings, a chapel and other buildings. The principal painter, for such Master William, the monk of Westminster, was †, might consequently have been employed there on subjects not unworthy of his abilities; the more ordinary labours being undertaken by assistants. The accounts from which the following items are extracted comprehend the period from the second to the fifth year of the reign of Edward I. (1274—1277), but many are missing.

"To William the painter, and his associate, for the painting of twelve mews, 36*s*. To the same, for seven score and twelve lb. of green for the

* See the note, with a further description of the MS., at the end of this chapter.

† See Gage Rokewode's *Account of the Painted Chamber*, p. 25.; where it is satisfactorily proved (contrary to Walpole's supposition) that William, the monk of Westminster, was a distinct person from William of Florence. The difference of their abilities may be estimated by the fact, that, while the latter was paid sixpence a day, William of Westminster was receiving two shillings.

same, 75*s.* 4½*d.* To Stephen Ferron, for twenty lb. of white, 2*s.* To the same, for one gallon of honey, 12*d.* Item: for one gallon of white wine, 3*d.* Item: for small brushes (?) and eggs, 3½*d.* Item: for yellow, 6*d.* Item: for size, 12*d.*"* Other accounts relating to operations in the same locality include a variety of materials: but the surest indication that some of the work was of a superior kind is the frequent mention of eggs, the proper tempera vehicle for all finer painting.

The use of wine in diluting glutinous vehicles was common for a long period: in the quotations already given, from St. Audemar and others, it is frequently mentioned. Vasari relates that the facetious Buffalmacco persuaded some nuns, for whom he painted, to supply him with their choicest wine, ostensibly for the purpose of diluting the colours.† The Northern artists were sometimes content to use beer; the word (cervisia) is to be met with in early treatises on art; for example, in Eraclius and Theophilus‡: its occurrence may per-

* "Willielmo Pictori et socio suo pro pictura XII. mutarum XXXVI. s. Eidem pro $\frac{XX.}{VII.}$ XII. li. de viridi ad idem LXXV. s. IIII. d. ob. Stephano Ferroni pro XX. li. albi II. s. Eidem pro I. gallon mellis XII. d. Item, pro I. gallon vini albi III. d. Item, pro bersīs et ovis III. d. ob. Item, in croco VI. d. Item, pro coli XII. d."

† Vasari, Vita di Buonamico Buffalmacco.

‡ Beer is still commonly used by decorative painters for graining. Its peculiar fitness, as a very weak glutinous medium,

haps be considered an indication of the transalpine origin of a MS., as it never appears in Italian documents. In the accounts relating to works executed in the chapel of S. Jacopo, at Pistoja, in 1347, certain quantities of wine are mentioned as part of the wages of the painters "pro eorum mercede:"* the quantity furnished to William of Westminster is too small to have been allowed for this purpose. The mention of white wine seems to indicate that the vehicle was intended for light colours. The Strassburg MS. directs red wine to be mixed with a violet colour: in the British Museum MS., quoted in a former chapter, "good and very clear white wine" is preferred for green.†

Judging from some existing specimens, it would appear that the early painters of Nuremberg used this honey vehicle. If so, the method, like the cloth-painting of the "frater Theotonicus," might be supposed to have found its way to Venice; but, with the exception of Gentile da Fabriano, who was in Venice for a considerable time, there is seldom any appearance of a more than ordinary fusion of tints in the early works of that school. The tempera pictures of Crivelli are even remarkable for the laboured treatment before mentioned. It would be

for fixing certain preparations before the application of varnish, is well known.

* Ciampi, Notizie inedite della Sagrestia Pistoiese, Firenze, 1810, p. 146.

† Le Begue, again, speaks of "très bon vin blanc" to be used in a mordant for gilding.

desirable to ascertain whether the altar-piece inscribed "Johannes de Alamania et Antonius de Murano, p. 1445.," now in the public gallery in Venice, exhibits a different execution, as that work was undoubtedly painted, in part, by a German artist.

Other English Methods of the same Period.

With the exception of the peculiarities in practice that have been described, the technical processes in England during the fourteenth century closely resembled those of Italy. This is apparent, if we compare the records of the works executed at Westminster during that and the preceding age, with early Italian documents and treatises; the English methods occasionally indicate even greater precautions, chiefly with a view to intercept damp. Walls which were to receive paintings of figures appear to have been prepared with cloth glued over the surface*: sometimes leaf-tin was found immediately

* Such expressions as "pro veteri panno, panno, canabi, canevas," and more particularly "Nicholao Chaunfer pro xv. ulnis de canevace emptis pro coopertura ymaginum regum depingenda vi. s. viii. d." (1353), seem to refer to this practice. In the documents relating to the Duomo of Orvieto we find: "i. libra et iii. den. pro pretio quorundam petiorum panni lini veteris pro angelis impanandis." The date is 1351. (*Della Valle, Storia del Duomo d' Orvieto*, Roma, 1791, p. 281.) The method is thus generally alluded to by Sandrart: "As they feared that the walls might crack, they glued linen over them, then laid a ground of gypsum, and painted their pictures in tempera."— *Teutsche Acad.*, part i. p. 66.

next the wall, even under gilt plaster ornaments.* Wood was generally covered either with parchment, leather, or linen.† Plaster of Paris, the careful preparation of which for the purposes of painting is described by writers earlier than Cennini, was used for grounds.‡ The common parchment size was employed for tempering the gesso or plaster, and as the ordinary vehicle for painting (with or without the addition of honey); the egg medium being reserved for finer work. This agrees with the practice of wall-painting described by Vasari when speaking of the ancient Italian methods. His words are: "Walls, when dry, should receive one or two coats of warm size, the work being then executed entirely with colours tempered with it: and any one wishing to mix the colours with size will find no difficulty, observing the same general rules as in painting with yolk of egg; nor will the paintings be the worse for being so executed."§ The fish-glue, so often mentioned in the Westminster accounts, was employed for carpentry.‖

* Gage Rokewode's Account, &c. p. 16.

† Pownall found parchment under a tempera picture of the time of Richard II. (*Archæologia*, v. 9.) "Pellis" is mentioned in the Westminster account-rolls.

‡ "In cole, plastro Paris," &c. (1347.) A chapter headed "Ad faciendum gessum subtile" occurs in one of the MSS. of Alcherius.

§ Vasari, Introd. c. 20.

‖ "Johanni Lovekyn pro c. greylingsondes emptis pro bordis conjungendis III. s. (1353)." Compare Smith's Antiq. of Westminster, p. 183. 200.

Parchment, as well as "royal paper," was used for certain patterns (not worthy to be called cartoons) which served to transfer designs in the decoration of St. Stephen's Chapel.* A mode of preparing them is described in the *Illuminir-Buch* of Boltzen, a work which will be more particularly referred to in the note at the end of this chapter. The uses of parchment, in the operations of the English painters, explain some terms in a record (in the possession of Sir Thomas Phillipps, Bart.) which is quoted in Gage Rokewode's *Account of the Painted Chamber*, p. 12. "P̄ skrowys ad inde fac̄ cole t̄ pronnos [patronos];"† that is, "for parchments to make size and patterns." The word "scrow" is used as synonymous with parchment in an early English manual, called *A very proper Treatise, wherein is breefely set forth the Art of Limning.*‡

* "Johanni Lambard pro II. quaternis papiri regalis emptis pro patronis pictorum XX. d. — Eidem [Georgio Cosyn] pro I. quaterna papiri regalis empta pro patronis pictarie [sic] inde faciendis X. d. [1353]."

† The date is 1307.

‡ "Imprinted at London by Thomas Purfoot, 1596." At the end of the book; "Finished Anno Dom. 1573." See, also, in Johnson's *Dictionary*, the derivation of the word "scroll."

The technical term "size" originally meant a solid composition applied as a ground for gilding. It was chiefly used for raised or "ingrossed" letters: the manuals on illuminating abound with receipts for it. The origin of the term is to be found in the MSS. of Alcherius, where it is called "assisium, Gallice assise;" that is, a layer, or foundation (for gilding). The older Italian and Spanish writers on art employ the word

It is not necessary here to investigate the precise nature of the various colours used in this country, or elsewhere, during the fourteenth century; but the subject is so far important as the materials may be found to have a connexion with the style of the period: a few observations on certain terms that have occasionally been the subject of inquiry may, also, not be out of place. Among the colours used by the English artists, the words "tinctus" and "teint" often occur. They probably represent the inferior lake made from brazil wood, and called in the Strassburg MS. "röselin varw." The directions for preparing it are among the commonest formulæ of the missal-painters. "Bresil" is mentioned, together with the grain dye extracted from crimson cloth, among the English receipts collected by Theodoric of Flanders, and preserved by Alcherius. In another of the MSS. of the latter (*Experimenta de Coloribus*), the word is written berxilium, berxinum, and versinum, thus show-

"sisa" in a like sense (Alessio, *Secreti;* Pacheco, *Arte de Pintura*). The "syze" of the early English writers has the same meaning. The Strassburg MS. speaks of "ein gut assis zu golde:" the form is here perhaps an indication of the early date of that manual, or rather of its original. The author of the *Proper Treatise* uses the expression "to ingross" (applied to raised letters) in the sense of the Italian "sgrossare;" to reduce or scrape the surface of the "sisa" so as to fit it to receive the gold leaf. Ingrossed letters were thus necessarily gilt letters. At a later period, for example in Shakspeare's time, the term "engrossed" appears to have had reference to the magnitude only of the written character.

ing the origin of the Italian term *verzino*. It is scarcely necessary to remark that the tree must have given its name to the country, not the country its name to the tree; if, as is commonly assumed, there is any connexion between the two. Brazil wood is mentioned in MSS. on painting written some centuries before the discovery of America.* The origin of the term appears to be either the Spanish *brasas* or the Italian *brage* (glowing coals), in reference to the colour. Chaucer, in the "Nonnes Preestes Tale," alludes to it thus:—

> "He looketh as a sparhauk with his eyen,
> Him nedeth not his colour for to dien
> With brazil, ne with grain of Portingale."

The poet could not want illustrations from the sister art, as he was appointed Clerk of the Works at Westminster, by Richard II., in 1389, with the pay, for that and other duties of the kind, of two shillings a day. It will be observed that the colours noticed by him are the same as those described in the English receipts before mentioned.† The insect

* The tree in the eastern hemisphere, which is said to resemble most nearly the American Cæsalpinia Crista or (modern) brazil wood, is the Cæsalpinia Sappan, a native of India. It may have been imported into Europe by the Venetians and the Moors. In an early MS. on painting, once in the Library of Montpelier, now in that of the Sorbonne at Paris, we read: "Lignum brasilium nascitur in partibus Alexandriæ et est rubei coloris."

† The extract of brazil, which fades in oil, was esteemed, not without reason, by the illuminators. There are speci-

called kermes by the Moors furnished the colour and name of crimson (kermesino, cremesino); sometimes called grain, from the prepared material. The grain of Portugal was celebrated from the time of Pliny to that of Chaucer.* The word vermiculus, the older form for vermilion, also refers to this insect in the earlier treatises.

In the accounts relating to St. Stephen's Chapel, in the time of Edward III., madder lake appears under the names "cynople," "sinopre." The word must have been originally intended for "sinopis" (strictly, a red earth).† That, in the documents referred to, it meant lake, is proved by various circumstances. In the MSS. of Alcherius we read that "sinopis is a colour redder than vermilion; it is also called cinobrium and mellana, and is made

mens of the tint itself in the Venetian MS. The evidence as to the identity of the colour is somewhat singular. The writer, after describing a mode of preparing a bright red "cholore de grana" with "braxile overo lo verzino," observes that even after it is dry in the shell it may be diluted (with a solution of alum in vinegar); and that then, though paler, it is still good for writing. He continues: "the title of this receipt was written with the tint of the second quality, after the first infusion was dry." The title is, "A fare questo cholore e anchora piu bello che none questo: probatū." The other rubrick titles are of a brighter red tint, having, perhaps, been written with the first infusion.

* "Granum ... circa Emeritam Lusitaniæ, in maxima laude est." — L. ix. c. 65. "Grana" is noted in a list of colours in the Montpelier MS.

† For a description of its varieties, see John, Die Malerei der Alten, p. 123.

from madder."* Again; "sinopis is otherwise composed of madder and the lake above described,"† viz. a lake prepared from ivy gum.‡ In the British Museum MS. (fourteenth century) before quoted, sinopis is described as a composition of "lacta" and madder. § In the *Proper Treatise* "synapour lake" is noticed. Lastly, St. Audemar observes that sinopis is "very costly:" accordingly it is the highest-priced colour in the records. The most expensive azure (probably "azurro della Magna") in the accounts now adverted to was ten shillings the lb.; the best cynople was thirty shillings the lb.‖ The cheaper kind was perhaps mixed with ivy lake. On one occasion Hugh of St. Alban's procured the cynople of Montpelier (the great manufactory and emporium of colours for some centuries)

* "Sinopis est color magis rubeus quam vermiculus, aliter dicitur cinobrium, aliter mellana, et fit de Varancia."

† "Et aliter sinopis fit ex Varancia et lacha superscripta."

‡ Obtained by making incisions in the branches of ivy "in the month of March." —*St. Audemar.*

§ "Si vis facere optimam sinopidem accipe lactam et Waranciam et coque," &c. Elsewhere: "Rubia major, id est, Waranz [Garance]." The Indian lac lake may be referred to in the following passage (MSS. of Alch.): "Item ad faciendam lacham tolle unciam unam lache que est quedam gumma dicta lacha," &c.

‖ "Eidem [Johanni Lightgrave] pro III. lb. de asure emptis pro eadem pictura precium lb. x. s. xxx. s. Eidem pro I. lb. de cynople empta pro pictura dicte capelle xxx. s. [1353]." In accounts of Edward the First's time (1294) the best azure was twenty-six shillings the lb.

at eight shillings the lb.* A colour called sinopis, which cost four shillings the lb. in the time of Edward I. (1292), may have been of the same inferior quality.

The directions for preparing these and other brilliant reds are not more numerous, in the treatises of the fourteenth century, than the receipts relating to the favourite green, "viride Græcum" (vert de Grèce, verdigris). The term "viride" alone, which also occurs in the Westminster accounts, appears to be intended for it. Green earth is distinguished in the MSS. by the epithet "terrestre," and sap greens by other designations.

The "broun" mentioned in the records was a red earth: the term perhaps comprehended various kinds. The early painters, accustomed to apply the epithet "red" to lake, kermes grain, and vermilion, looked upon red ochres and bole as brown colours: the last-named material was more especially so designated. In a sort of vocabulary prefixed to the MSS. of Alcherius, we read: "Brown I believe to be Armenian bole; the word is elsewhere used for 'dragon's blood,' which is nearly of the colour of bole."† In the *Proper Treatise* before quoted, all

* "Magistro Hugoni de Sancto Albano pro II. lb. de cynopre de Monte Pessalono precium lb. VIII. s. XVI. s. [1353]."

† "Brunus est color quem puto esse bularminium; alibi ponitur pro sanguine drachonis, qui quasi coloris bularminii est." The adhesive nature of bole, as well as its colour, rendered it an eligible ingredient in the composition of grounds for gilding. The Italian term "brunire," to polish, may perhaps be traced

ochres are called browns, and the mixture of "white with a good quantity of red" (the colour not being specified) is described as making "a sadde browne." It is to be remembered that the word "sad," applied to colours, meant deep or dark; it is used in this sense by the author last cited: for example, "two parts azure and one of cereuse, sadded with the same azure"; again: take "two parts synapour and a third of cerius, and lay it on thy vinets [foliage]*, and when it is dry, sadde it with good synapour." The equivalent term is "to enew" (enough), that is, to saturate: "enewed or sadded with good ochre." These terms agree with the early practice of art; shadow, with the medieval painters, was equivalent to the deepening of the local tint. Coarse and monotonous as the result was, in their hands, such a view of nature was, by the colourists, sometimes made compatible with the largest style of imitation.† The brown of

to the burnishing of gold on Armenian bole (or brunus). Compare Vasari, Introduzione, c. 28., and Vita di Margaritone.

* "Trace all thy letters, and set thy vinets or flowers, and then thy imagery if thou wilt have any." Though written, as it appears, after the middle of the sixteenth century, this *Treatise* frequently describes the practice of a much earlier age. It was probably copied from an older manual.

† From the examples given it is, at the same time, apparent that the term "sad" (employed as above) corresponded with the German "satt" (Latin "sat") and only resembled the word "shadow" accidentally. In the Strassburg MS. the two expressions appear together, the latter being somewhat disguised by the mode of spelling. "Uff itelm zinober sol man *schetwen* mit paris rot oder mit *sattem* röselin." "Pure vermilion should

the Westminster artists may have been the Spanish brown, which, if early writers describe it correctly, resembled Indian red.* With this and indigo the darkest shadows were made. "Indebas et broun" sometimes occur together at the end of the list of materials, as if representing the shadow colours. In the Strassburg MS., indigo, broken with other colours, is used for all darks, except in the flesh: in the *Proper Treatise* it is called "an Indian black." It appears frequently in account-rolls of the time of Edward I. and Edward II.; but rarely in those of the next reign, when St. Stephen's Chapel was rebuilt and splendidly decorated. This can only be explained by the imperfect state of the existing records, as the colour was universally employed in the fourteenth century, and the "London indigo" (no doubt imported directly from the Levant) was celebrated at a much later period.

The synonymes of indigo are curious. In the earlier English accounts relating to operations in painting (1274), this colour is called Indebas; in the MSS. of Alcherius we read, "indicum finum qui cognomine bagadellus vocatur;" a similar term in the same MS. is explained by the observation

be shaded with lake or with deep brazil red." Again: "Müsch dar under enwenig wis weder ze liecht und [noch] ze *satt* und *schetwe* daruff mit *sattem* spangrün." Take green and "mix a little white with it [making a tint] neither too light nor too dark, and shade thereon with deep verdigris."

* See the Art of Painting in Oyl, by John Smith, 1687, p. 21. Haslam found a red oxide of iron among the remains of colours in St. Stephen's Chapel.

"c'est à dire baguedel." The Montpelier MS. speaks of "indicum de bagadeo;" the Venetian MS. calls it "indigo bago;" Cennini mentions it under the name of "indigo baccadeo" (on one occasion, even "maccabeo"). The following note on this colour, in De l'Escalopier's *Theophilus*, sufficiently explains all these corruptions. "The most esteemed of the indigoes was that of Bagdad; it was called 'indigo bagadel.' The tariffs of Marseilles speak of it under that name, as early as the year 1228." *

Azura, lazura, is the blue copper ore called by the Italians Azurro della Magna (d'Allemagna), and often simply Azurro. In the statutes of the Sienese painters (1355), the artists are enjoined to provide the real colours which, in their contracts, they promise to use; and not to substitute "Azurro della Magna for Azurro oltramarino, nor biadetto, nor indigo for Azurro." † Biadetto, in the Venetian MS. called "bladetus de Inde," is the pale mineral blue which was termed cendre d'azur, and la cendrée in the time of Rubens. De Mayerne says, "la cendrée is made of the blue stone which comes from India, and which is found in silver mines." Elsewhere he gives its synonyme, "cendre d'azur, beis." ‡ In the Westminster accounts we

* Théophile, &c. p. 298.

† Gaye, Carteggio inedito d' Artisti, Firenze, 1839—1840, vol. ii. p. 7.

‡ Elsewhere, "la bice des Indes" and "la cendrée d'azur

find Azura and Pura azura distinguished from Bis azura or azura debilis*: the term "bisso," in Cennini, may be connected with these designations.

As the pigments called brown were by no means dark, it would appear that the painters of the fourteenth century, who restricted themselves to the materials which have been described, with their imperfect notions of light and shade, had no means of producing strength of effect but by local colours. The light scale of their flesh tints seems, however, in some instances, to have influenced the treatment of the rest of the work. The picture at Cologne, before referred to, is of this pale character; the two interesting altar-pieces (formerly in the Chartreuse near Dijon, and now in the Museum of that city,) painted in 1391 for Philip the Bold of Burgundy † have the same delicate tone. Works of this period are rare; but if, as Smith supposed, the wall-paintings of the

dite en Anglois bice." De Mayerne, also, states that a similar colour was found in the Ardennes. Compare Field, Chromatography, 1835, p. 113.

* In accounts belonging to the time of Edward I. (1294), "bis azura" is four and five shillings the lb. The best "azure" (called "fin," "pura," and "optima"), as before stated, being then twenty-six shillings the lb. In 1353 (Edward III.) "azura debilis" is five, and "azura" ten, shillings the lb.

† The prince who, when scarcely fifteen years of age, fought at the side of his father, King John of France, at the battle of Poictiers, and was taken prisoner with him (1356). Those illustrious captives, with many other foreigners of rank, saw the Chapel of St. Stephen in its finished state, and, at that period, could imbibe a love for art in England.

Chapter House at Westminster were executed in the middle of the fourteenth century *, they may be classed among the most interesting specimens of transalpine art of that period extant. The general character of the colouring in these paintings resembles that of the time; but the local tints are forcible, and the execution is not without a feeling for roundness. It would be desirable to compare these remains (for portions only are well preserved) with some works executed at Ghent, Ypres, and Cologne, in the thirteenth and fourteenth centuries.

Certain technical operations, characteristic of the art of the period, which are to be traced in the English decorations, closely correspond with those described in the early writers. The gilding in St. Stephen's Chapel was profuse; the use of leaf-tin, according to the account-rolls, was equally abundant. Leaf-silver, on the contrary, is rarely mentioned in the later records. This is perhaps explained by the following observation of Cennini.

* When some of the presses were removed in 1801, "representations of angels were discovered to have been painted on the walls, which Mr. Smith minutely examined, and found to resemble those in St. Stephen's Chapel, engraven for this work. From a close comparison of the style of colouring, and from the general character of all of them, Mr. Smith is thoroughly persuaded that the paintings in both buildings were executed by the same artists." — *Antiquities of Westminster*, p. 226. note. Other portions of the walls, covered with paintings, have since been visible: the small and ill executed figures in those compartments appear to be later in date. See the note at the end of Chap. VI.

"Above all, remember to use as little silver as possible; because it does not last, but turns black on walls and on wood, especially on walls. Use, in preference, leaves of tin. Beware, also, of gold that is much alloyed, for it quickly turns black."* All the documents before mentioned, from the Lucca MS. downwards, speak of tin-foil, and of its use, by means of a yellow varnish, to imitate gold. Vestiges of this lacker, the auripetrum of Eraclius, were found by Haslam on some fragments from St. Stephen's Chapel, that were submitted to his examination. The gold leaf, he remarks, "was of great purity."†

The impressions of patterns on gilt grounds, and the ornaments in relief, observable in early Italian pictures, are frequently referred to in the English accounts. The directions of Cennini, and the terms employed in those records, mutually explain each other. The Italian describes the operation of partially roughening or indenting (granare) the gilt field by means of a pattern stamp (rosetta). In the Westminster records (1353), we find "stamps for printing the painting with impressions‡;" with other entries of the same kind. Embossed ornaments, sometimes gilt, sometimes covered with leaf-tin lackered or variously coloured, studded many

* Trattato, cap. 95.

† Smith, Antiq. of Westminster, p. 224.

‡ "Pro stupis emptis pro impressionibus picture imprimendis II. d." The origin of "stupis" is, perhaps, to be sought in the German "stupfel," punchion.

parts of the interior of the chapel. Descriptions of similar methods occur in Cennini (c. 102—130.). The mode of preparing the leaf-tin cut into the proper forms, to be applied either on the raised ornaments or alone, is also fully detailed by that writer (c. 97—101.). Numerous passages in the Westminster accounts show that the English practice was the same.* The insertion of gems (or imitations of them), Anglice "nouches," in the raised diadems of saints is not omitted by the Italian (c. 124.), and the process is to be recognised in some items of earlier accounts belonging to the time of Edward I.† Some details respecting the implements described by Cennini, and mentioned in the English records, are given in the note at the end of this chapter.

It is thus evident that, with the exception of such modifications in technical processes as the difference of climate required, the habits of the English painters in the fourteenth century closely resembled those of the followers of Giotto. As already remarked, this is easily explained by the bond of union which existed between religious

* "Pro VI. duodenis foliorum stanni emptis pro preyntes inde faciendis pro pictura dicte capelle VI. s." Similar entries are frequent. "In cotone empta pro preyntes depictis cubandis. . . . Cubantibus aurum tam super dictis parietibus quam super posicione preyntorum super columpnis marmoreis." (1353—1355.)

* "Item in VI. nouchis V. s. . . . In tribus nouchis II. s. VI. d." (1249.)

establishments, the members of which (as has been seen in many instances) were chiefly active in collecting and communicating information on practical points. In all that belonged to the higher elements of art, in all that the dull descriptions of the monks could not convey, the Italians, during this period, commonly surpassed their transalpine rivals; but in mechanical details they were indebted, in their turn, to the artists of the North.

In order to complete the general view of the state of art, technically considered, in the fourteenth century, some particulars respecting the state of fresco painting and wax painting, at that time, are added in the next chapter.

NOTE

ON A GERMAN MANUSCRIPT IN THE PUBLIC LIBRARY AT STRASSBURG.

(*Marked* A. VI. No. 19.)

This manuscript is stated by competent judges to have been written in the fifteenth century, but the methods which it describes, like those in Cennini, the Venetian MS., and other compendiums of the kind, belong for the most part to an earlier period. This is apparent, not only from internal evidence as regards the methods themselves, but from the circumstance of the manual having been avowedly compiled from other authorities and documents. For example: "This relates to colours [the preparation of] which Meister Heinrich von Lübegge

taught me." Elsewhere; "This Meister Andres von Colmar taught me."* From other expressions it is equally clear that certain portions were transcribed from an older MS.

The receipts for the preparation of colours used in illuminating resemble those in the treatise of St. Audemar, the Venetian and Montpelier MSS.†, and other early authorities. The nature of the materials sometimes employed in this branch of art need not surprise us when their peculiar application is remembered. The colours, though chiefly extracted from flowers and vegetable substances and too evanescent for general use, were found to last in manuscripts, because light and air were excluded from them. This experience was not lost on the painters of larger works executed with more durable materials, such as altar-pieces; the ancient custom of enclosing these in shrines undoubtedly tended to preserve them, and was therefore long retained.

The colours for illuminating were commonly preserved by steeping small pieces of linen in the tinted extracts, sometimes mixed with alkaline solutions. The process is minutely described in this MS.; the dyes so prepared are there called "tüchlein varwen," literally "clothlet colours." The following passage from another compendium, the Venetian MS., gives the result in few words. "When the aforesaid pieces of cloth are dry, put them in a book of cotton paper, and keep the book under your pillow, that it may take no damp; and, when you wish to use the colours, cut off a small portion [of the cloth], and place it in a shell with a little water, the evening before. In the morning the tint will be ready, the colour being extracted from the linen."‡ This practice is alluded to by Cennini when he says: "You can shade with colours, and by means of

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* "Dis ist von varwen die mich lert Meister Heinrich von Lübegge."

"Dis lehrt mich Meister Andres von Colmar."

† The latter speaks of "colores qui fiunt de succo herbarum et florum."

‡ "E quando seranno seche le dite peçe mitele ī uno libro de charta bōbaxina e tine lo libro soto lo chavezale aço che nō pia umiditad e quando ne voi adoverar taiane uno puocho e mitelo amoio la sira ī uno chaparaço con uno puocho de aq^{a} la maitina sera fato e lo cholore foro de la peça."

small pieces of cloth, according to the process of the illuminators."*

The German compiler, speaking of the preparation of a blue colour in this mode, says: "If you wish to make a beautiful clothlet blue colour according to the London practice," † &c.: after describing the method of preparing it he adds: "These [pieces of cloth] may be preserved fresh and brilliant, without any change in their tints, for twenty years; and this colour, in Paris and in London, is called [blue] for missals, and here in this country clothlet blue; it is a beautiful and valuable colour." ‡

The place denominated *Lampten*, mentioned together with *Paris*, can be no other than London. Instances of misspelling, quite as curious, occur in almost every line of this manuscript. But for the clue afforded by this connexion of the two names, representing two prominent schools of missal-painting, the adjective, "lamptschen — lampenschen," (for Londonschen) would have been unintelligible. It occurs thrice. The first instance has been already quoted; afterwards we read: "If you wish to make a fine violet colour, take London indigo, and twice as much brasil extract," &c. § The third passage is remarkable. "This manual [another of the sources whence the MS. was compiled] teaches how to temper all colours for painting, and also for executing foliage [in illuminating], according to the practice of London; likewise [treats] of all transparent colours, red, blue, &c.; and how to make transparent parchment [size] as clear as glass. It teaches also how to prepare three kinds of gold size, and how to compose three kinds of varnish: and in the first place two aqueous vehicles

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* "Puoi fare ed ombrare di colori e di pezzuole secondo che i miniatori adoperano." — *Trattato*, cap. 10.

† "Wellent ir schön fin tüchlinblau var machen nach lamptschen sitten," &c.

‡ "Man mag sü 20 jar wol behalten frisch und schön das ir varwe niemer verwankt und dise varwe heisset ze paris und ze lampten vor misal und hie im land tüchlin blau und ist liep und wert."

§ "Wiltu schön violvarw machen so nim lamptschen endich und zwürent als vil prisilien roter varwe," &c.

with which all colours may be tempered, and this is the first of such gum waters." *

After the receipts for these, — consisting of a solution of gums, with and without the addition of honey and vinegar, — the transparent colours are described; thus agreeing with the order indicated in the prefatory statement. Having given these directions, which are somewhat diffuse, the writer observes (in the words before quoted): "I have now honestly and, to the attentive, amply taught how all colours are to be tempered, according to the Greek practice, with two aqueous vehicles." Whatever may be thought of the ignorance of the compiler, it is apparent that the epithet "Griechische" is here equivalent to the "Londonsche" before used.† The directions which immediately follow relate to the English size and honey vehicle before described. Then follows the preparation of oil for painting and for gold sizes; lastly, the three varnishes are described; the catalogue thus strictly agreeing with the previous general statement.

The observation respecting the "London practice" might, according to the strict interpretation of the words, relate only to the "two aqueous vehicles" first described; but, when it is

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* "Dis buchlin lert wie men all varwen tempieren sol ze molen und ouch ze florieren nach lampenschen sitten und ouch von allen durchschinigen varwen rot blau und wie man durschinig bermit sol machen luter als ein glas. Es lert ouch machen drierleige gold grunde und lert ouch drierleige virnis machen und zu dem ersten 2 wasser damit man alle varwe tempiereren mag und ist dis das erst gumi wasser."

The expression "zu dem ersten," "in the first place," is a form occurring repeatedly in the MS. It is here equivalent to a longer phrase. "First, then, to take the subjects which I have enumerated in due order, I begin by describing the processes which I first mentioned: the following are water-colour vehicles for painting and for executing foliage."

† This may be explained by supposing that the epithet "Greek" occurred in the original compendium; and the German compiler, after saying, in his own person, that the book which he was about to transcribe taught the London practice, may have afterwards copied the language of the original; the older manual being derived perhaps from a Byzantine source.

found that the methods throughout agree literally with the "London practice," as far as that is recorded, it seems more than probable, that the compendium from which these receipts were borrowed contained a full account of the English methods which were in use during the fourteenth century. As regards the directions for oil painting, however, internal evidence rather warrants the conclusion that they are later than the other notices. After describing the size vehicle, the writer thus proceeds: —

"How to temper all oil colours. — Now, I will also here teach how all colours are to be tempered with oil, better and [more] masterly than other painters; and in the first place how the oil is to be prepared for the purpose, so that it may be limpid and clear, and that it may dry quickly.

"How to prepare oil for the colours. — Take the oil of linseed, or of hempseed, or old nut oil, as much as you please, and put therein bones that have been long kept, calcined to whiteness, and an equal quantity of pumice stone; let them boil in the oil, removing the scum. Then take the oil from the fire, and let it well cool; and, if it is in quantity about a quart, add to it an ounce of white copperas; this will diffuse itself in the oil, which will become quite limpid and clear. Afterwards strain the oil through a clean linen cloth into a clean basin, and place it in the sun for four days. Thus it will acquire a thick consistence, and also become as transparent as a fine crystal. And this oil dries very fast, and makes all colours beautifully clear, and glossy besides. All painters are not acquainted with it: from its excellence it is called oleum preciosum, since half an ounce is well worth a shilling; and with [this] oil all colours are to be ground and tempered. All colours should be ground stiffly, and then tempered to a half-liquid state, which should be neither too thick nor too thin.

"These are the colours which should be tempered with oil. Vermilion, minium, lake, brasil red, blue bice, azure, indigo, and also black, yellow orpiment, red orpiment, ochre, face brown red, verdigris, green bice, and white lead. These are the oil colours and no more. Here observe that these colours are to be well ground in the oil, and at [last] with every colour mix three [that is, a few] drops of varnish, and then place every colour by itself in a clean cup, and paint what you

please. — With all the above mentioned colours a small quantity of calcined bone may be mixed, or a little white copperas about the size of a bean, in order to make the colour dry readily and well." *

Then follow rules for the immixture of the colours, and the mode of shading each tint. From the mention of flesh colour,

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* "Wie man alle ouli varwen tpierē sol. — Nu wil ich ouch hie leren wie man alle varwen mit oli tpieř sol bas und meisterlich denn ander moler und zu dem ersten wie man das oli dar zu bereiten sol das es luter und clor werde und dester gern bald troken werde. Wie man das oli zu den farwen bereiten sol. — Man sol nemen linsamen oli oder hanfsamen oli oder alt nus oli als vil man wil und leg darin alt gebrent wis bein und ouch als vil bimses und las das in dem oli erwallen und wirf den schum oben abe von dem oli und setz es ab dem füre und las es wol erkülen und ist des olis ein mos so leg zwei lot galicen stein dar in in das oli und so zergat er in dem oli und wirt gar luter und ouch klar und dar nach so sige das oli durch ein rein lin tüchlin in ein rein bekin und setz das bekin mit dem oli an die sunne 4 tag so wirt das oli dik und ouch luter als ein schöner cristall und dis oli das troknet gar bald und macht alle varwe schön luter und ouch glantz und umb dis oli wussent nüt alle moler und von der guti dis olis so heisset es oleum preciosum wand 1 lot ist wol eines schillinges wert und mit olin sol man alle varwen riben und ouch tpieř alle varwen in der diki riben und ouch tpieř als ein halber bri der weder ze dik noch ze dünne si.

"Dis sint die varwen die man mit oli tpierē sol zu dem ersten zinober nimien paris rot röselin rot liech blau lazur endich und ouch swartz opiment gel rüschelicht verger antlit brunrot spangrün endich grün und ouch bliwis.

"Dis sint die oli varwen und nüt me hie merke dis varwen sol man alle gar wol riben mit dem oli und ze . . . [a] so sol man under ieglich varwe drie troph virnis riben und tu denn ie die varw sunder in ein rein geschirr und würke do mit was du wilt — under alle dise vorgn. varwe mag man en wenig wises wolgebrentes beines riben oder en wenig wisses galicen steines als gros als ein bone umb das die varwe gern und wol troken werdent."

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[a] A word is wanting in the copy, the original having been perhaps illegible.

"libvar, libvarw," and the directions for painting faces, hands, and undraped portions, "antlit und hende und do das bild nakent ist," it would appear that oil painting was sometimes employed for figures, when the original manual was written; at the same time it is to be remarked that the primitive nature of the mode of painting which is described, indicates a very early date.

With respect to the colours above enumerated, *Paris rot* (Paris red), according to the MS. itself, was lake. As before stated, the treatises of the fourteenth century, particularly those written in France, speak of madder lake under the name of Sinopis, the name which it bears in the Westminster records. *Röselin rot* is described as a preparation from brasil wood (presilien holtz). The *liech blau* (licht blau) corresponds with the "azura debilis" of the English records, and both answer to biadetto. *Rüschelich*, sometimes written rüschegel (rauschgelb), is red orpiment or realgar. Orpiment is noted in accounts of the time of Edward I., and appears in the records of Ely. Black * is mentioned among the materials of the Westminster artists, but it seems that it was chiefly used by the glass-painters for drawing their outlines on white boards, which served instead of cartoons. No dryers are named in the accounts; they may be comprehended in such expressions as "et aliis minutis — coloribus et aliis," &c. The materials may be supposed to have been familiar; calcined bones, in particular, were used in painting as early as the twelfth century. In the *Mappæ*

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* "Geet and Arnement" (1352), that is, jet and ink (atramentum); see Halliwell's *Dictionary of Archaic and Provincial Words:* Smith, in the *Antiquities of Westminster*, explains "arnement" improperly as orpiment. Ink (inchiostro) is mentioned by Cennini as the ordinary material for drawing outlines. The term jet perhaps represented coal black, or rather bistre, called "russ" in the Strassburg MS. From some passages in the accounts these blacks or browns appear to have been, at first, solid substances. "Thome Dadyngton et Roberto Yerdesle molantibus geet et arnementum pro pictura vitri." Elsewhere; "molantibus get pro pictura vitri." The outlines of the wall-paintings were no doubt sometimes drawn with the same materials. Compare Gage Rokewode, Account, &c. p. 15.

Clavicula verdigris is directed to be mixed with a white made of calcined stag's horn (as it cannot be mixed with white lead without changing).* In the British Museum MS. (fourteenth century) before quoted, the following passage occurs. "Grind the white of [calcined] bones like the other colours; it is particularly necessary to painters, because it may be mixed with orpiment, a colour which can be mixed with no other white." †

As some of the receipts in the Venetian MS. were afterwards printed in collections of *Secreti*, so many directions in the Strassburg MS. are to be recognised, though somewhat altered in form, in the *Illuminir-Buch* of Valentine Boltzen.‡ That author states, in the titlepage of his manual, that part of his communications had never before appeared in print; and, in the preface, apologises to his professional brethren for publishing their secrets, observing that no useful knowledge should be concealed. Among the receipts, the immixture of honey with vehicles for illuminating frequently occurs; and hempseed oil is mentioned with the other oils, as in the MS. The mode of preparing and employing the calcined bones, which is more fully described, may be noticed in another chapter. Boltzen appears to consider the drying power of this ingredient quite sufficient, as he omits the white copperas. The omission is to be accounted for in no other way, since that material was the universal dryer in Germany, the Low Countries, and England, from the fifteenth to the eighteenth century. The printed form throws little light on the terms of the MS.; "ouger" (ochre) is more intelligible than its written equivalent "verger;" on the other hand, "lamptschen endich" is altered to a form which would defy recognition but for the steps to it which can now be

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* "Viride Grecum distemperabis cum aceto, incides de nigro matizabis de albo quod fit de cornu cervi." "Mix verdigris with vinegar, shade with black, light up with white made of [calcined] stag's horn."

† "Album de ossibus moles sicut ceteros colores est ideo pictoribus necessarium quod cum auripigmento potest misceri que mixtura de albo alio fieri non potest."

‡ 1566, no place. The second edition, 1589, was published at Frankfort; the third, 1645, at Hamburg.

traced. The writer observes: "I ought to write of various kinds of indigo, but I restrict myself to that particular sort which is called Lampartischen indigo; it is found in apothecaries' shops." * The word does not occur elsewhere in the treatise, and in three editions it is always the same; it is only surprising that it did not grow into "Lombardischen."

The question respecting the English origin of the mode of preparing oil above described, is to be viewed in connexion with the facts that have been adduced in the foregoing chapters. The preparation of oil in the sun was peculiar to no country: it has been seen that it was universal. Verdigris and calcined bones were early used in Italy; the latter of those ingredients, white lead, and, it now appears, white copperas, were employed perhaps at a still earlier period in the North. That the use of these various materials, as siccifics, was familiar in this country, if familiar anywhere, there cannot be a doubt. It has been shown that oil painting was prevalent in England, before it was common elsewhere; and the habitual use of the method for ordinary purposes, in such a climate, is of itself a proof of the early use of dryers.

The decoration of St. Stephen's Chapel (after it was rebuilt by Edward III.) in the middle of the fourteenth century was an important event in the history of Northern art. If the talents which the execution of that work called forth — represented by Barneby †, Hugh of St. Alban's, Cotton, Maynard, and others — were not further encouraged, in consequence of Edward's prolonged wars, and the disorganised state of the country in the succeeding reign; still, the extent of the operations in and about the chapel may have influenced the practice of the neighbouring schools; and the English methods, in oil painting particularly, may have been adopted in countries where a similar

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* "Von Endich solt ich vilerley arten schreiben, aber ich wil mich allein zu den gewissen halten den mañ nents [nennt] Lampartischē Endich, den findet mann in den Apoteken."

† The name of John Barneby does not appear in the lists of the artists employed in St. Stephen's Chapel till 1355; he received two shillings a day, that is, twice as much as Hugh of St. Albans.

climate required similar remedies. The intercourse between this country, Germany, and Flanders, at that period, is indicated by various circumstances connected with art, to say nothing of political occurrences. The names of the numerous artists employed in the chapel are chiefly English, but we find that glass was furnished by John de Alemayne, gold leaf by William Allemand, and white varnish (mastic) occasionally by Lonyn of Bruges. In the preceding century (1294) Gilectus of Bruges, a painter, received the highest wages next to Master Walter.*

The coincidence between that part of the Strassburg MS. which speaks of the "London practice," and the methods and materials of the English artists as they are recorded in the documents of the time, is not to be overlooked. The size and honey vehicle has been described. The "transparent colours" applicable, as is incidentally stated in the MS., to linen, resemble those which were noted by Theodoric of Flanders, and afterwards communicated by him in Italy. The occurrence of some English names of water colours in the MSS. of Alcherius and elsewhere, further shows that the "London practice," in this respect, had before attracted attention. The directions for preparing oil grounds for gilding, are not less remarkable, and tend even to explain the consumption of oil during the embellishment of St. Stephen's Chapel, profusely decorated as it was with gold. It is important to observe that the dryers mixed with the gold mordant described in the MS. are the same as those before mentioned as entering into the composition of

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* Indications of the use of oil painting for common purposes are not wanting in Flanders in the fourteenth century, and it happens that they appear at the time when the decorations of St. Stephen's Chapel were in progress. De Bast (*Messager des Sciences*, &c., Gand, 1824, p. 50.) quotes some accounts, dated 1351–1352 (found in the archives of Bruges), in which a certain painter engages to decorate the chapel of the Stadt-House at Damme with gold and silver and "all manner of oil colours suitable thereto." "Jan van der Leye den schildere, van der capelle te stoffeerne ten Damme in der steden huus van Brügge, van Goute, van Zelver in allen maniere van olye vaerwe dier toe behoorde," &c.

the oil vehicle. In this case the employment of such ingredients in the fourteenth century need not excite surprise; for it has been shown that dryers were used in mordants before they were introduced in oil painting. The more ancient mode of gilding was by means of glutinous mordants; a firmer ground was required in the North; and the date of the oil gold size, whenever it may have been introduced, may be safely assumed to mark the commencement of the use of dryers for purposes connected with painting.* The preparation of the gold size is thus described:—

"Here I will teach how to gild and silver all materials speedily and effectually, so as to produce a splendid effect; and, in the first place, how to make an excellent varnish colour, on which gold and silver [leaf] may be laid; dry, beautiful, delicate, and lustrous; and from which the gilding and silvering can never be removed, neither by water nor by wine, whatever be the surface on which you lay this gold colour, whether it be iron, steel, tin, lead, stone, or ivory, with all metal-work, or cloth, or taffeta, all things soever on which this colour is applied. Take two parts of ochre, the third part of Armenian bole, and the fourth part of minium, and grind them together on a stone with linseed oil. Grind them well, and in consistence neither thicker nor thinner than the other oil colours; and grind also with the colour calcined bone, about the size of half a walnut to a bleeding-cupful† of colour, and as much white copperas as calcined bone. And after all this is well ground, then add [as much as] half a walnut-shellful of varnish, and mix it thoroughly with the colour. Then, removing all the colour from the stone, place it in a clean glazed cup, and take a piece of skin from a bladder and cut it so that it shall fit the cup, and smear one side well with oil; then place the piece of bladder on the colour. You have thus an excellent colour for gilding, on which

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* It thus appears that the Northern artists led the way in accelerating the drying of oil and in retarding the drying of tempera. Neither of the remedies employed for these objects was adopted to the same extent in Italy.

† "Las kechelin (Lasbecken);" the expression indicates that the compiler was in some way connected with the healing art.

gold and silver leaf never loses its brilliancy and lustre. The piece of bladder should be placed on the colour so as to touch its surface every where; thus the gold colour will not skin; and all other oil colours should be covered in the same manner. By this contrivance they remain in a fit state for a long time, and do not quickly become hard."*

Even the details relating to the operation of gilding are not without interest, from their coincidence with the early English methods. "Here I teach how to gild on this gold colour. In the first place, if you wish to gild on wood, on cloth, or on taffeta, give two or three coats of fresh size beforehand. When the size is dry on the wood, cloth, or silk, pass the gold colour over the size with a soft hog's hair brush, spreading the colour equally

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* "Hie wil ich leren wie man kürtzentlich und ouch gar nützlich alle dinge vergülden und versilbern sol schön und ouch glantz und zu dem ersten wie man sol machen ein edel glas varwe dar uff man gold und silber leit troken schön vin und glantz und das das gold und das silber niemer ab gat weder von wasser noch von win und war uff du dise gold-varwe strichest es sig isen oder stahel oder zin oder bli oder stein oder bein und andre alle gesmide oder tuch oder zendat und sies ander alle dung do man dise varwe uff strichet. Nim zwei teil vergers und das dritteil bol armenici und das vierde teil minien und rib das alles wol under enander uff einen rib stein mit lin öl und rib es ouch gar wol weder ze dik noch ze dünne als die andren oli varwen und rib ouch als gros wisses gebeines das gebrent si dar under als ein halb boum nus und ouch ein las kechelin vol der varwen und ouch als vil galicen steines als des beines ist gesin und wenn dis alles wol geriben ist so rib ze hindrest in die varwe ein halb nuschal vol virnis in die varwe und zertrib den virnis gar wol under die varwe und tu die varwe von dem stein gar in ein rein überlazurt kachlen und nim phlemlin von einer blattern und schnid das phlemlin sinwel das es recht kome über das kechelin und bestrich das phlemlin zu einer sitten gar wol mit oli und das phlemlin leg oben an uff die varwe so hast du ein edel gut gold varwe dar uff man gold und silber leit das es sinen schin und sin glantz niemer verlürt das phlemlin sol man alle wegen under über die varwe legen so wachset kein hut über die gold varwe und also sol tu allen andern oli varwen tun so belibet si lang lind und werdent nüt balde hert."

and thinly: then let it dry, but not too much; touch it with your finger, and when it is dry and glossy, but still slightly adhering to the finger, it is in the fit state for gilding. Then cut your gold or silver leaf, and lay the pieces carefully on, one next the other, where the colour is, and press the gold gently on its ground with cotton, till the whole surface is gilt or silvered. Then rub the surface with cotton to remove the superfluous gold from the unprimed places; it will adhere firmly elsewhere. Here observe that iron, tin, lead, and all metal-work, ivory, and all hard materials, do not require to be coated with size first, although wood and cloth require it. But stone surfaces and walls should be first saturated with oil before the gold colour is applied. And in the aforesaid manner all materials are to be gilt."*

The saturating (tränken) of walls with oil before even the gold size was applied is another instance of an application of the oil, besides its employment in painting. The foregoing

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* "Hie lere ich wie man uff dise goldvarwe vergülden sol zu dem ersten wiltu uff holtz oder uff tuch oder uff zendat vergülden so überstrich das holtz vorhin mit frischen lime zwürent oder dritund das das holtz werde und tu den andern ouch also und wenn der lim truken wirt uff dem holtz oder uff dem tuch oder uff dem stein [der seide?] so strich die gold varw über den lym mit einem weichen bürste bensel und strich die varwe glich und dünne uff und las die gold varwe troken werden und ouch nüt ze gar und griff mit dem finger uff die varwe und ist die varwe troken und ouch glantz und hafftet dir der finger enwenig in der varwe so ist si in rechter mos ze vergülden so schnide din gold oder din silber und lege das ordenlich uff nach enandern wo die varwe si und truke das gold senfteklichen wider mit boumwollen uff die varwe untz das es alles gar verleit wirt mit golde oder mit silber und dar nach so ribe das gel über all mit wulle so vart das gold abe wo die varwe nüt enist. Und belibet das golde vast wo das gold hingestrichen ist. Hie merk isen zin bli und alle andri herti gesmide und bein und senliche herti ding die bedarfent nüt das man si vorhin mit lym überstriche wenn allem holtz und tuch aber uff steinen und uff muren die sol man vor mit oli trenken eman die golvar uff strichet und zu glicherwise als hie vor gelert ist also sol man ouch andri ding übergülden."

particulars represent, in all probability, the practice of the decorators of St. Stephen's Chapel. As regards the materials, the dryers (or, at all events, some dryers) must, for the reasons before given, of necessity have been used. The colours, the oil and the oil varnish, the earthenware cups for the colours, the cotton for the gilding, are all noted in the accounts.* The circumstance of two sets of colour-grinders being sometimes employed (without reference to glass-painting) might suggest the supposition that one class prepared the colours for the painters (either in tempera or in oil), and the other the gold colour only.†

It appears, therefore, that the only difficulty in identifying the formulæ of the MS. with the English practice of the fourteenth century is the application of oil painting to figures. When Vasari, in the second edition of his work, alludes to Cennini's description of oil painting, he indirectly defends his

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* "Pro ollis—pro locatione vasorum—pro parvis ollis terreis emptis ad imponendos diversos colores.——Pro cotone empta ad ponendum et cubandum aurum in eadem capella. In I. lb. pili porcorum empta ad pincellas pictorum inde faciendas XII. d. In I. lb. pili porcorum empta pro bruciis pictorum," &c. Besides hog's hair brushes of various forms Cennini (cap. 64. 65.) describes the mode of preparing small brushes (indispensable in gilding) from the tail of the vaio, an animal, according to the *Della Crusca Dictionary*, resembling the squirrel; the hairs were to be inserted in quills of vultures, common fowls, or doves, according to the work required. The English accounts frequently contain such details as the following: "In xxx. pennis pavonum et cignorum et caudis scurrellorum emptis pro pincellis pictorum II. d. ob." De Mayerne speaks of brushes "de queue d'escureuil." Cespedes (quoted by Pacheco, *Arte de Pintura*, p. 396.) says that the best pencils are made of the hairs of the "vero [vajo] Belgico." The French equivalents for vaio are, *vair*, *petit gris* (*menu vair* being apparently the origin of minever). F. Cuvier, in the *Dictionnaire des Sciences Naturelles* (Paris, 1816–1829), remarks that *petit gris* is merely the name of the common squirrel in its winter colour.

† "II. pictoribus molantibus colores pro dictis operibus utrique ad V. d. per diem. Rogero Wals cum II. sociis suis molantibus colores—capientibus per diem IIII. d. ob." The entries occur repeatedly together.

own statement respecting the invention of Van Eyck. He remarks that Cennini treated "of grinding colours in oil to make grounds [for draperies], red, blue, green, and in other modes; and [also treated of oil] for gold mordants, *but not for figures.*"* It happens, as already seen, that Cennini does treat of painting figures in oil; but Vasari's statement may be considered to amount to a declaration that he himself knew of no such application of the method having been made before the time of Van Eyck. The historian's opportunities of judging, in regard to this question, in the sixteenth century, were better than ours; time has, however, confirmed his testimony. It is repeated, no undoubted examples of figures painted in oil during the fourteenth century have hitherto come to light; nor is there any distinct record of such works having been then commonly executed. If, therefore, the original of that portion of the Strassburg MS. which treats of oil painting was written before the year 1400, the passages describing the application of the method to figures are to be placed in the same category with the similar notices in Cennini and even in Theophilus; they are to be regarded as directions which were rarely if ever followed.

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* "Trattò finalmente de musaici, del macinare i colori a olio per far campi rossi, azzurri, verdi, e d'altre maniere, e dei mordenti per mettere d'oro, ma non già per figure."— *Vita d'Agnolo Gaddi.*

CHAP. VI.

FRESCO PAINTING AND WAX PAINTING DURING THE FOURTEENTH CENTURY.

Fresco Painting.

Among other methods employed in the middle ages, wall-painting with lime, and wax painting, are to be noticed. The first would, by its general terms, comprehend fresco painting; but that process, as described by Vasari, and as practised by the great Italian masters, does not appear to have been in use till near the close of the fourteenth century. Fresco painting requires, as is well known, to be executed in portions; the surface of fresh plaster which is laid on when the painter is about to begin his day's work must be covered and completed, as a portion of a picture, before such plaster is dry; and so on, till the whole design is executed. Some ingenuity is necessary to conceal the joinings of the several portions: it is generally contrived that they shall coincide with lines in the composition, or take place in shadows. Their existence is however unavoidable, and these divisions in the patchwork (for such it may be called), of which all works of the kind must consist, are among the tests of fresco painting, properly so called. Whenever the extent of a surface of plaster, without a joining,

is such that it would be impossible to complete the work contained in it in a day, it may be concluded, even without other indications, though such are seldom wanting, that the mode of execution was not what is called "buon fresco."

Walls decorated by the earlier Italian masters exhibit no joinings in the plaster having any reference to the decorations upon them. The paintings must consequently have been added when the entire surface was dry; and must either have been executed in tempera, or, if with lime, by means of a process called "secco," (or sometimes "fresco secco," as opposed to "buon fresco,") which is still commonly practised in Italy and in Munich. The method has been thus described. The plastering having been completed, and lime and sand only having been used for the last coat, the whole is allowed to dry thoroughly. It is then rubbed with pumice-stone, and the evening before the painting is to be commenced, the surface is well wetted with water in which a little lime has been mixed. The wall is again moistened the next morning; the cartoons are then fastened up, and the outline is pounced. The colours are the same as those used in "buon fresco," and are mixed with water in the same way, lime being used for the white. "Work done in this way will bear to be washed as well as real fresco, and is as durable; for ornament it is a better method than real fresco, as in the latter art it is quite impossible to make the joinings of the plaster at

outlines, owing to the complicated forms of ornaments. The work can be quitted and resumed at any time, as the artist has always the power of preparing the surface by moistening it, as at first. But while the method offers these advantages, and is particularly useful where ornamental painting alone is contemplated, it is, in every important respect, an inferior art to real fresco."*

That this method was practised during and before the thirteenth century will be evident from the following passage in Theophilus. "When figures or other objects are drawn on a dry wall, the surface should be first sprinkled with water, till it is quite moist. While the wall is in this state, the colours are to be applied, all the tints being mixed with lime, and drying as the wall dries, in order that they may adhere."†

In the notes added by Le Begue (1431) to his copy of the MSS. of Alcherius, the following passage occurs. "Portions of walls [intended to be painted] should be rather moist than otherwise, because the colours thus unite and adhere better;

* See a Report on Fresco Painting, by Mr. Wilson, Director of the Government School of Design at Somerset House, in the *Second Report of the Commissioners on the Fine Arts*, p. 40.

† "Cum imagines vel aliarum rerum effigies protrahuntur in muro sicco, statim aspergatur aqua, tam diu donec omnino madidus sit. Et in eodem humore liniantur omnes colores, qui supponendi sunt, qui omnes calce misceantur, et cum ipso muro siccentur ut hæreant." — *Div. Art. Schedula*, l. i. c. 15. Theophilus nowhere describes the practice of "buon fresco."

and all colours for walls should be mixed with lime."* The passage in Theophilus (from which this may have been copied) is conclusive as to the early use of "secco," in the sense above explained, for wall-painting. The method, like other processes employed in the middle ages, was probably derived from the ancients; and it may be conjectured that the paintings of Pompeii were, to a certain extent at least, thus executed. Two important facts support this view. First, lime is found in nearly all the colours†; and, secondly, in most of the walls two horizontal joinings only in the plaster are to be detected.‡ The work in either of the three divisions, but especially in the larger middle division, is much more than could be executed in a day. The method therefore could hardly have

* "Et doivent être murs pans plus moiste que aultre chose pour ce que les couleurs se tiennent mieux ensemble et seront plus fermes, et doivent toutes couleurs pour murs être mellez [sic] avec chaux vive."

† "In every colour, whether employed as the general tint of a compartment, or in the painting of figures and ornaments, a drop of diluted sulphuric acid produced an effervescence, indicating the presence of a small, and often invisible, portion of carbonate of lime, even on the surface of the deepest black." —*Wiegmann, Die Malerei der Alten,* Hannover, 1836, p. 42. The exceptions are where some few portions are executed in tempera; some colours on walls, vermilion for instance, are protected with a wax varnish (*Vitruv.* l. vii. c. 9.). It was this circumstance which deceived Winkelmann and others, who maintained that the paintings of Pompeii were executed in wax.

‡ Ib. p. 38.

been "buon fresco." The peculiar fitness of "secco" for ornamental work (which abounds in Pompeii) has been already noticed.*

The use of lime "in all the colours," according to the directions of Theophilus and Le Begue, would necessarily occasion a want of force in the shadows. This was remedied by subsequent painting in tempera. Theophilus, immediately after the passage quoted, speaks of the application of colours mixed with yolk of egg, on the previous preparation, when dry.† The next step to fresco painting (perhaps the ordinary lime painting practised by the ancients) consisted in laying in the design immediately after the original plaster was spread on the wall, and while it was moist. This preparation, or

* Besides the conclusive evidence afforded by the presence of the lime, many of the walls exhibit indented outlines, sometimes, as in the "Casa delle Fontane," indicating the process of tracing. Hence Wiegmann inclines to the opinion that the paintings may have been executed even in "buon fresco," and gets over the difficulty of the quantity of work by supposing that the numerous layers of mortar in the wall kept the surface moist for many days. If so, still the method of "secco" (and it appears even tempera occasionally) may have been employed in finishing. The writer here quoted, who is by far the most rational of those who have considered the subject of the Pompeian decorations, might have been assisted in his investigations by a reference to the wall-painting of the middle ages.

† In strict accordance with the description of Pliny: "Pingentes sandyce sublita mox ovo inducentes purpurissum, fulgorem minii faciunt. Si purpuram fecere malunt, cæruleum subliniunt, mox purpurissum ex ovo inducunt."— L. xxxv. c. 26.

dead colour, at least established the forms and masses of colour; and, when dry, the work could be finished either in "secco" or in tempera: the moderns preferred the latter. The method adopted by the followers of Giotto in this partial fresco painting was somewhat singular. The first rougher coat of lime and sand having been allowed to dry, the painter sketched his composition upon it with a red colour in outline, sometimes adding the shadows. The design was copied from a small drawing, in the usual mode, by means of squares. Then the intonaco, or thin coat of lime and sand, on which the painting itself was to be executed, was added, either at once, or in greater or less portions (accordingly as the chief work was intended to be in fresco or in tempera); and on this intonaco the design was repeated. Thus the drawing underneath was destined, from the first, to be covered. It was probably traced before the lime was spread over it, as the forms could then be reproduced in the same places, the tracing being fitted by means of the ends of the squared lines underneath. In thus making a design which was to be obliterated, the object could only have been to judge of the effect of the composition in its place. In the Campo Santo, at Pisa, a half-decayed fresco, representing the Coronation of the Virgin (painted in 1391, by Pietro d' Orvieto), shows, where the intonaco has fallen off, the first design drawn, and even shaded, on the plaster underneath. Vasari, describing an unfinished work at

Assisi, by Lippo Memmi, states that the outline was drawn with the brush in red, on the first coat of plaster; "which mode of proceeding," he observes, "might be called the cartoon which the early masters prepared before painting a fresco, in order to shorten the work." He adds that several unfinished and decayed wall-paintings exhibited the same preparation.* The method was retained even after the improved system was introduced. It is described by Cennini. (*Trattato*, c. 67.)

The earliest work in "buon fresco" is probably that painted by Pietro d' Orvieto, in the Campo Santo, at Pisa, about 1390, representing some subjects from Genesis.† In this instance the joinings of the plaster are frequent, as compared with earlier wall-paintings, and the amount of work in each portion may have been, and to all appearance was, finished at once. The earlier mode of employing tempera as the complement of fresco was, however, long retained. The works of Pinturicchio, executed at Siena, in 1503, are completed in tempera, and exhibit colours (such as lake) which are incompatible with mere lime painting.‡ The mixed method was even common at a later period in the sixteenth century, if not at Florence, at least

* Vasari, Vita di Simone e Lippo Memmi.

† Ernst Förster, Beiträge zur neuern Kunstgeschichte, Leipzig, 1835, p. 220.

‡ See "Observations on Fresco Painting," by Mr. Dyce, in the Sixth Report of the Commissioners on the Fine Arts, p. 11.

in other Italian schools. Thus Vasari states that Girolamo da Cotignola executed certain works at S. Michele in Bosco, in Bologna, which were laid in in fresco, and finished in tempera." * The same writer speaking of a series of paintings by Ercole da Ferrara, in a chapel at Bologna, says: "It is reported that Ercole employed twelve years on these works, seven in preparing them in fresco, and five in retouching them." † As the seven years may be supposed to comprehend the execution of the designs and cartoons, together with the first painting on the walls, the quantity of work in tempera was at least equal to that in fresco.

It should be remembered that the expression "a secco" is usually employed by Vasari for retouchings in tempera, and it is not to be confounded with the "secco," or lime painting, on dry walls described by Theophilus. The former term is also used by Italian writers in speaking of repainting or glazing on oil pictures when dry. Examples of "secco," or lime painting, perhaps exist in this country, but the rude representations sometimes to be met with on the walls of chapels are commonly retouched in size.

* "A fresco imposte ed a secco lavorate."—*Vasari, Vita di Bartolommeo da Bagnacavallo.*

† "Dicono che Ercole mise nel lavoro di questa opera dodici anni, sette in condurla a fresco e cinque in ritoccarla a secco. —Id., *Vita di Ercole pittore Ferrarese.*

Wax Painting.

The art of using colours prepared with wax, and of fixing pictures so executed by the aid of fire, was inherited from the ancients by the early Christian painters. The term "encaustic" which was long appropriated to this method, strictly means "burning in," an expression which, as Caylus remarked, is scarcely applicable to the mere melting of wax colours. The process, according to the words of Pliny, was not originally restricted to wax painting, but comprehended the engraving by means of encaustic, of outlines on ivory and other substances, with a metal point.* In this instance again the expression need not be taken literally; forms burnt on ivory could not have been very delicate works of art. It may rather be supposed that the outlines first drawn on waxed

* "Encausto pingendi duo fuisse antiquitus genera constat, cera, et in ebore, cestro, id est, viriculo, donec classes pingi cœpere. Hoc tertium accessit, resolutis igni ceris penecillo utendi, quæ pictura in navibus nec sole, nec sale, ventisque corrumpitur." — L. xxxv. c. 41. "Anciently there were two modes of painting in encaustic, [one] with wax, and [the other] on ivory, by means of the cestrum or graver, till ships began to be painted. This was the third mode introduced, in which the brush was used, the wax [colours] being dissolved by fire." The metal instrument was therefore employed in both the first modes. The cestrum (*κέστρον* a *κεντέω*) was a pointed graver, but it must have been formed like the stylus, flat at one end and sharp at the other; since designs in wax, executed with the point, could only have resembled the *sgraffiti* on ivory, and there can be no doubt that the early wax pictures were much more finished.

ivory, (for the facility of correcting them where necessary,) were afterwards engraved in the substance; and that the finished and shadowed design was filled in with one or more colours; being ultimately covered with a wax varnish by the aid of heat.* Works so produced must have resembled the *nielli*, or, on a small scale, the *sgraffiti* of the Italians, and were no doubt quite as excellent. With the later pagan and early Christian painters, the word "encaustic" was confined to wax painting (with the brush) by means of fire. The prevalence of the method at a subsequent period accounts for the gradual application of the term to all kinds of painting, an application which, in the later vicissitudes of art, may be said to have survived the process itself. Thus a Greek philologist, writing at the close of the fifteenth century, explains a term equivalent to encaustic by the synonyme "painted, because artists who paint on walls are called

* See the sensible observations of John, Die Malerei der Alten, Berlin, 1836, p. 206.

An antique specimen of this art, formerly in the possession of Monsignore Casali, in Rome, is referred to by Haus, *Sulla Pittura all' Encausto*, p. 76., quoted by Raoul-Rochette, Peintures Inédites, &c., Paris, 1836, p. 378. A description of a method somewhat similar, and perhaps originally Greek, occurs in the Venetian MS. After directing the preparation of a blue tint with tempera, the writer continues:—"Spread it on the foil, and, when it is dry, draw on the foil with a sharp point whatever you wish, and afterwards give it a coat of liquid varnish. It will have a good effect." "E mitelo sopra el stagnolo e qū srā secho desegnali como uno steco aguto quelo che voy e poy dali la vernixe liquida de sopra. Srā vaga cossa."

encautai." * Other modes of painting, and even illuminating, were sometimes included. The purple and vermilion, used for the imperial signatures and in calligraphy, received the name of encaustic.† By degrees the more ordinary material of writing acquired the designation; the "incaustum" of Theophilus and other medieval writers is, in substance as well as in name, the "inchiostro" of the Italians, and the source of the English "ink."

The more ancient modes of wax painting mentioned by Pliny were of two kinds: one, above described, was a sort of intaglio filled in with tints; the other more resembled painting, yet rather in its results than in its process. A heated metal instrument was used instead of the brush. The variously coloured wax pigments were rather modelled than painted into shape. The process, in its commencement at least, and before the tints were blended, must have resembled mosaic; while its elaborate nature confined the artist to small dimensions. The difficulties of the method were, nevertheless, overcome by some celebrated Greek

* Ἐγκεκαυμένη, ἐζωγραφημένη, ἐπεὶ ἐγκαυταὶ [ἐγκαυσταὶ] λέγονται οἱ ζωγράφοι οἱ διαγραφόντες τοὺς τοίχους. "Encausta, picta; quia Encaustæ dicuntur pictores qui muros pingunt. Etymol. Magnum, voc. Ἐγκεκαυμένη."—*Émeric-David, Discours Historiques sur la Peinture Moderne*, Paris, 1812, p. 180. See also Letronne, Lettres d'un Antiquaire à un Artiste, Paris, 1840, p. 412. The Lexicon here quoted (the work of Caloergos) was edited by Musurus, Venice, 1499.

† See Panciroli, Rerum memorabilium sive deperditarum, &c. Francof. 1660, p. 10.

painters; and, at a later period, the small encaustic pictures of Pausias, executed in this style, were proverbially objects of admiration in the eyes of Roman collectors.*

The peculiarity of the third and later mode, encaustic painting chiefly so called, which was practised by the ancients and in the first centuries of the Christian era, consisted in the regulated fusion of the surface of the picture by fire, when the work was completed; the wax with which the colours had been mixed having been dissolved in the first instance, so as to render the pigments fit to be applied with the brush. "To paint with wax [colours], and to burn in the picture†" when finished, were the conditions of the art. The inustion, or burning in, supposes a sufficient quantity of wax (whatever may have been the other ingredients) to promote the general fusion and to produce an apparently enamelled surface. The instrument employed to effect this was called the *cauterium*. This, whether a pan of coals (*Vitruv.* l. vii. c. 9.), a heater, or whatever it may have been, was the characteristic implement of the encaustic painter; who, as we have seen, represented, for a considerable period, the painter generally. Hence Tertullian, writing against the dissolute heretic

* "Pausiaca torpes, insane, tabella." *Hor. Sat.* ii. 7.

"Parvas pingebat tabulas.... Hoc æmuli eum interpretabantur facere, quoniam tarda picturæ ratio esset illa." — *Plin.* l. xxxv. c. 40.

† "Ceris pingere ac picturam inurere." — Ib. c. 39

Hermogenes, who happened to be a votary of art, says he was "doubly a perverter of truth, with his cauterium and his stylus*;" an expression equivalent to the modern phrase "with his pencil and his pen."

In the intaglio encaustic the pointed instrument which was used was called *cestrum* or *viriculum* (veruculum); the substances which were engraved and tinted were various.† A female artist, Lala of Cyzicum, is mentioned as having excelled in portraits, sometimes executed in this mode on ivory.‡ In the second style before mentioned, the heated instrument with which the wax tints were blended was called *rhabdion*§: it was probably flat at one end (like one extremity of the stylus); its forms and sizes, indeed, may have been as varied as those of brushes now. The encaustic painter who used the rhabdion or cestrum (for the terms are employed sometimes indiscriminately) was provided with a box with compartments in which the variously tinted cakes or sticks of wax colours were kept.‖ The cauterium was not necessary;

* "Bis falsarius, et cauterio et stylo."—*Tertull. adv. Hermog. Pict.* c. 1. Quoted by Émeric-David, Discours Hist. p. 182.

† Plin. l. ii. c. 45. l. xxxv. c. 41.

‡ "Lala Cyzicena ... et penecillo pinxit, et cestro in ebore, imagines mulierum maxime ... suam quoque imaginem ad speculum."—*Plin.* l. xxxv. c. 40.

§ Literally, a small rod; the term appears to have been also a synonyme for the pencil. See Letronne, Lettres d'un Antiq. p. 388.

‖ "Pausias et cæteri pictores ejusdem generis loculatas magnas

the rhabdion, heated in a small furnace kept at hand, supplied its place.* The artist painted on (small) panels. The implements of the encaustic painter in the third style were, brushes, the cauterium, and pots of more or less liquid wax colours, instead of, or in addition to, wax crayons or cakes.† The artist painted on wood, and, when

habent arculas, ubi discolores sunt ceræ." — *Varro, De Re Rustica*, l. iii. c. 17.

A mode of applying colours with a similar ingredient, by means of heat, is exemplified in the Venetian MS. Colours are directed to be mixed with turpentine resin, first boiled to a concrete state; sticks of this material, variously tinted, on being applied to heated glass, melt as required, and the design is thus coloured. The writer quaintly says: "As soon as they feel the warmth, they will adhere and melt like wax; this work is proof against water, and shows on all sides." "Como sentirano el caldo se apicarano e desfarasse como cira e questo nō temera aqua e parera da ogni lato." The receipt is headed: "A fare stichi da lavorare ī vedro." Among modern methods, the fusion of paintings or rather drawings executed with wax crayons, as proposed by Tomaselli (*Della Cerografia*, Verona, 1785), is somewhat analogous.

* "Il faut distinguer le cauterion d'avec le rabdion; le premier étoit employé dans l'encaustique-au-pinceau, le second dans l'encaustique-au-cestre." — *Émeric-David, Disc. Hist.* p. 174. note. Compare Letronne, Lettres, &c. p. 493., on a picture by Philiscus, representing "officinam pictoris, ignem conflanti puero."

† "Instrumento legato pictoris colores, penecilli, cauteria et temperandorum colorum vasa debebantur." — *Julius Paulus, Recept. Sent.* lib. iii. tit. 6. § 63., quoted by Letronne, Lett. p. 390. "Pictoris instrumento legato, ceræ, colores, similiaque horum, legato cedunt; item peniculi, cauteria et conchæ." — *Digest. de Fundo instruct.* § 17. (Martianus, lib. xvii.), quoted by Wiegmann, Die Mal. der Alten, p. 165.

the method was more generally adopted, sometimes on walls. Those who painted in the second style generally practised the third also.* As regards the mere process, no difficulty presents itself in the two first modes; in the third, the method is not so clear.

The ancient mode of bleaching wax so as to render it (while in contact with air) unchangeably white and fit to be mixed with all colours, is minutely described by Dioscorides†, and, after him, by Pliny.‡ The material being thus prepared, the important question remains: How was the wax softened and dissolved, so as to fit it as a vehicle for colours applicable with the brush? for wax alone, merely melted by heat (though it may be so used as a varnish with subsequent friction), cools too rapidly for the operations of painting. It is remarkable that, as yet, no passage has been found in a classic author which clearly describes this process. The omission may be allowed to

* "Pausias autem fecit et grandes tabulas." — *Plin.* l. xxxv. c. 40. "Nicias [an encaustic painter] . . . fecit et grandes picturas." — Ib. Large works by both masters were to be seen in the Portico of Pompey, at Rome, in Pliny's time. "Lala . . . et penecillo pinxit et cestro in ebore." — Ib. "Penecillo pingere" generally meant, to paint in tempera. Pliny uses the expression in this sense, when he speaks of the restoration, undertaken by Pausias, of a picture by Polygnotus. The trial of Pausias was unsuccessful, "quoniam non suo genere certasset."— Ib. This is easily explained by the circumstance of the colour drying much more rapidly in tempera than in the pencil-encaustic.

† L. ii. c. 105. ‡ L. xxi. c. 49.

prove that it was familiar; but the doubt thus existing has been a fruitful source of theories, experiments, and controversies. It has been assumed by many, reasonably enough, that as the moderns, in speaking of oil painting, rarely mention other fluids which are known to be commonly used with the oil; so the wax, which Pliny and others name as the vehicle of the colours in encaustic painting, may have been one only of the ingredients of such vehicle. It was however the chief ingredient; not necessarily in regard to quantity, but inasmuch as it was indispensable to the fusion of the surface in the final inustion.

The possible methods which have been proposed by the moderns may be reduced to three. 1. The solution of wax by a lixivium, or, in more general terms, by any means which will allow of the pigment being mixed with water. 2. The solution by means of heat in a fixed oil. 3. The solution by means of an essential oil.

Requeno states that wax, when melted with mastic resin and immersed in cold water, forms a brittle compound which can be ground with colours in water; and that a picture executed with such colours (having been previously varnished with melted wax) can be blended and fixed by heat.* Astori is said to have mixed wax with

* Saggi sul Ristabilimento dell' antica Arte de' Greci, &c. Parma, 1787, vol. i. p. 288. 292.

honey and gum water with equal success.* But the mode of softening wax, which, however objectionable, appears to have had the greatest number of partisans in the last century, was by means of alkaline reagents; the material being thus converted into a kind of soap.†

The evidence in ancient authors respecting the solution of wax by a lixivium is scanty and indirect. An expression employed by Julius Pollux (a writer of the second century) has been supposed to point to the solution of wax by maceration, rather than to its liquefaction by fire.‡ Columella observes that the sediment in oil-vessels should not be cleansed with boiling lie-wash lest the wax (and resin with which the vessels were lined) should be dissolved.§ A medical writer of the second or third century remarks that the lixivium

* Della Pittura colla Cera all' Encausto; Memoria del Sign. Giammaria Astori. Venezia, 1786.

For an account of various other writers on this subject and, of their methods, see Fiorillo, Kleine Schriften artistischen Inhalts. Göttingen, 1803, vol. ii. p. 153.

† Bachelier, Lorgna, and Walter were the chief advocates of this system. It was ridiculed, together with the rival methods of Caylus and Majault, in a satire by Rouquet, entitled, "L'Art nouveau de la Peinture en Fromage, ou en Ramequin, inventée pour suivre le louable Projet de trouver graduellement des Façons de peindre inférieures à celles qui existent." Marolles, 1755.

‡ Κηρὸν τήξασθαι.— *Onomasticon*, l. vii. c. 28. See Grund, Die Malerey der Griechen, Dresden, 1811, vol. ii. p. 448.

§ De Re Rustica, l. xii. Grund, ib. p. 447.

of wood ashes dissolves wax.* To these notices may now be added the following two descriptions relating to the wax painting of the middle ages. The first is from the Byzantine MS.

"Mode of painting in order to give a shining surface.—Take size, a strong solution of potass, and white wax, in equal quantities; mix together and place them on the fire to dissolve. Add colour to this mixture; dilute the tint well and paint with a brush. Let the colour dry, and then you can give it a polish [by friction]. Gilding, if you use any, will become very brilliant; it is useless to add varnish." †

The direction to use a brush might almost induce a supposition that this is the remains of an ancient formula relating to the *penecillum* encaustic,

* "Tunc lixivia cinis ceras dissolvit."— *Quintus Serenus Sammonicus*, c. 42. Grund, ib. p. 448.

† "Comment il faut faire la peinture pour donner du lustre. —Prenez de la colle, de l'eau forte[a], et de la cire blanche en égale quantité ; mêlez-les ensemble et placez-les sur le feu pour les faire fondre. Ajoutez la couleur dans ce mélange; délayez-la bien, et peignez ce que vous voudrez avec un pinceau. Laissez d'abord cette couleur sécher, et ensuite vous pourrez la rendre brillante. L'or, si vous en mettez, deviendra très-brillant; il est inutile de mettre du vernis."— *Didron et Durand, Manuel*, &c. p. 44.

Wax, which yielded to the nail, was found by Branchi under gilding, in one of the paintings ascribed to Buffalmacco, in the Campo Santo, at Pisa. Ciampi, Notizie, &c., Append. p. 19.

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[a] In M. Didron's preface, p. 34., it is explained that "l'eau forte n'est pas l'acide nitrique, mais l'eau seconde de potasse."

as opposed to that which was executed with the *cestrum;* but the omission of the cauterium, not to mention the little promise of durability in the method indicated, betrays the modern character of this receipt. Thick varnishes were applied with a sponge or with the hand, and the use of the brush is here merely opposed to such modes. The observation respecting the inexpediency of varnish is just; and perhaps the term "encaustic," applied by Aetius to pictures which were varnished with nut oil in his time, is not to be taken in its strict sense, but as meaning paintings generally, or rather those which commonly required varnish. The method above described is still practised by the monks of Mount Athos.

The other description occurs in the notes appended by Le Begue to his copy of older MSS. In those older documents there is no allusion to wax painting; it may therefore be concluded that the use of the vehicle in question was confined to few. The passage is as follows: —

"If you wish to prepare a liquid fit to temper all colours, take one lb. of lime and twelve of Flanders [size]. Put them together in hot water and boil them well. After suffering the mixture to settle, strain well through a cloth. Take four lb. of this water and heat it well; take about two oz. of white wax and let it boil in this water. Then take about an oz. of isinglass and let it remain in water till it is softened and almost dissolved: manipulate it till

it becomes like paste. Put it into the water with the wax and boil all together. Then drop a little of this fluid on a knife or on iron, in order to see whether it is sufficiently boiled, and whether it is like glue. [If it have the proper consistence] strain it, while hot or tepid, through a piece of linen into a clean vessel; let it rest and cover it well. With this fluid you can temper all manner of colours." *

The second general process before adverted to, that of the solution of wax in a fixed oil, was so far practised by the ancients that walls were sometimes varnished and polished (by means of heat) with such ingredients; the polish being promoted by again waxing the surface and rubbing it with linen cloths. The oil in this case was olive oil; for, as before observed, whenever the word "oleum"

* "Si vous voulez faire eaue conoscite a destremper toutes couleurs prenez une livre de chaux et douze de Flandres, puis prenez eaue bouillante et mettez tout ensemble et les faites assez bouillir, puis le laissez bien reposer: puis le coulez parmy un drapel, et de cette eaue prenez livres quatre et la faites bien ardoir. Puis prenez cire blanche environ deux onces et la mettez bouillir avec l'eaue, puis prenez cole de poisson environ une once, puis la mettez en eaue et l'y laissez tant qu'elle soit bien amolie et si comme fondue; puis la maniez tant qu'elle soit comme paste, puis la mettez en l'eaue avec la cire et la faites ensemble bouillir, puis prenez de cette eaue et mettez sur un coustel ou sur fer pour savoir s'il est bien cuit et s'il est comme glue. Puis adonc coulez cette eaue chaude ou tiede parmy un drap linge en un vaissel net et laissez reposer et la couvrez bien; et de cette eaue pouvez destramper toutes manieres de couleurs."

alone occurs in ancient authors of the classic period, olive oil is always to be understood. Vitruvius, in describing the above process, which, he observes, was the same as that adopted for polishing statues, expressly directs that "a little" oil only should be used. The same ingredients are sometimes employed for polishing furniture now. The composition was thus merely a cerate, and could never have been fit for the purposes of painting: it was applied on coloured walls as an almost colourless varnish, the friction with cloths removing the superfluous oil.* The solution of wax in a drying oil (proposed and practised by Taubenheim and others) is not mentioned by classic writers, nor in the treatises of the middle ages.†

* Vitruv. l. vii. c. 9. In all operations connected with art, where wax was subjected to the action of heat, its application seems to have been considered a species of "encaustic." Thus the above mode of polishing walls was denominated *kausis*, and the varnishers of statues were called *encaustai*. Such methods were very ancient, but they related to varnishing, and are not to be confounded with encaustic painting. That art, according to Pliny, and judging from the date of the painters who excelled in it, was not common till the age of Alexander. The doubt expressed by Pliny as to the antiquity of the method is to be explained by the ancient use of the somewhat similar process above described.

† The following is a modern example of this vehicle. "Prepare the clearest raw linseed oil with litharge, in the usual way, for about six weeks. Add to the oil an equal quantity of mastic varnish; add to both a little scraped wax (about an eighth). Place the ingredients in an oven for a short time, till the wax is dissolved. A clear and almost colourless meguilp is the result."

As Vitruvius, in the passage above quoted, speaks of polishing walls "cum candelis linteisque puris," some doubts may exist respecting the use of candles noted in account-rolls of the fourteenth century. On two occasions we find, in the lists of materials used in St. Stephen's Chapel, the entry "in una libra candele albe;" the usual memorandum, "in candelis emptis," is frequent.* The important epithet "cereis" is, however, wanting, and the item may perhaps be explained by a fuller entry in the records of the Duomo of Orvieto: "Item pro x. libr. candelarum sepi pro lumine fiendo pictoriḃ. pingentibus in Tribuna maj̄. Ecclē ii. libras deñ." The date is 1373.†

The third hypothesis, that wax was dissolved by the ancient encaustic painters in an essential oil, has been supposed to be partly proved by chemical investigation. Fabbroni, in analysing the colours of a mummy cloth, found that they had been mixed with pure wax. He concluded that a volatile oil, probably naphtha, had held it in solution.‡ Dioscorides mentions the immixture of wax and naphtha (with other substances) for medicinal purposes.§ The expression "pharmaka," which occurs in a list of the materials of a painter‖, is often used by

* 1294. 22d Edward I.

† Della Valle, Storia del Duomo di Orvieto, Roma, 1791, p. 286. note.

‡ Antichità, Vantaggi e Metodo della Pittura Encausta, &c. Roma, 1797.

§ L. i. c. 101.

‖ Julius Pollux, Onom. l. vii. c. 28.

Greek writers merely as a synonyme for colours: but it may be allowed to comprehend both resins and naphtha, especially as the last is mentioned by Suidas in explaining the various meanings of the word "pharmakon." As regards medieval art, some light is afforded by the experiments of Professor Branchi, who analysed the colours on some fragments of early Pisan and Florentine pictures. His investigations warranted the inference that the wax, which was clearly ascertained to have been used, at least as a varnish, had been dissolved in an essential oil, apparently spirit of turpentine, as a slight resinous residuum was detected. The experienced chemist remarked further, that the earlier works, those for example of the time of Giunta Pisano (who lived in the first half of the thirteenth century), had the plainest evidence of having been executed, or at least varnished, with wax; and that soon after the middle of the fourteenth century wax ceased to be used by the Tuscan artists for the purposes of painting.* Such is the general nature of the evidence in support of the different opinions that have been expressed on this question.

In the revival of wax painting (with and without the final inustion) which has taken place of late

* Morrona, Pisa Illustrata, Livorno, 1821, vol. ii. p. 165. Morrona, after quoting the report of Branchi, speaking of his own experiments, states that he never detected wax in the substance of the colours; and that when it was found under the mere surface, it was evident that it had penetrated through the cracks of the picture. Ib. p. 168.

years in France and Germany, the principle of dissolving the wax in an essential oil has been adopted; the vehicle being consolidated by the addition of resins. Montabert was chiefly instrumental in introducing this art: an account of his theory and experiments will be found in his voluminous work on painting.* The process which he recommends does not appear to have been preferred in reference to any hypothesis respecting the methods of antiquity; in some applications of the ancient encaustic, however, a resinous ingredient was used. The following details may give some idea of the later cerography of the Greeks.

A composition of resin and wax was the ordinary material employed by the ancients to render surfaces waterproof. Among other purposes, this coarse varnish, sometimes in appearance like mere pitch, was used for ships. It is described, as so used, by Dioscorides, as follows. "Some give the name of zopissa to a compound of resin and wax which is scraped from ships; it is by some called apochyma, being in its nature solvent, because it is imbued with salt water. Others give the name [zopissa] to the pine resin." † The distinction be-

* Traité complet de la Peinture, Paris, 1829, vol. viii.

† Ζώπισσαν δὲ εἶπον οἱ μὲν εἶναι τὴν ἐκ τῶν πλοίων ξυομένην ῥητίνην μετὰ τοῦ κηροῦ, καλουμένην ὑπ' ἐνίων ἀπόχυμα, οὖσαν διαχυτικὴν διὰ τὸ ἐν τῇ θαλάσσῃ βρέχεσθαι· οἱ δὲ τὴν πιτυΐνην ῥητίνην οὕτως ὠνόμασαν. "Zopissam alii dicunt esse resinam cum cera navibus derasam, a nonnullis apochyma vocatam, quæ dissipandi vim habet, quia aqua marina est macerata. Alii pineam resinam sic appellant." — *Diosc.* ed. cur. Kühn. l. i. c. 98.

tween pitch and (nearly colourless) resin was familiar to Dioscorides, as he describes both *; and, from his here using the latter term, it is evident that the zopissa was not in itself black, though, when employed for the coarser purposes of ship-varnishing, it was no doubt made so. The varnish of wax and resin is alluded to incidentally by Pliny, in describing the different compositions used by the bees in constructing their habitations. After speaking of the first layer he says: "Upon this comes a cero-picine mixture, in the mode of pitch-varnishers, being wax in a more diluted form." † Here again, the substance which the naturalist calls "pissoceros" is rather a cero-resinous than a cero-picine composition; it only acquires a brown colour by age. That the Greeks did not always connect the idea of pitch with the word which they strictly used for it, may be further exemplified by the circumstance that common resin is still called by the Italians "Greek pitch" (pece Greca). For the rest, the expression "picantium modo, ceu dilutior cera," indicates the mode in which the solution of wax was effected.

The cero-resinous zopissa of Dioscorides, when first applied with the brush, was necessarily fluid. The resinous ingredient may have been either naturally liquid, or, if concrete, it was probably

* L. i. c. 91. 94. 97. &c.

† "Pissoceros super eam venit, picantium modo, ceu dilutior cera."—L. xi. c. 6.

dissolved by the addition of that essential oil which the liquid resins and balsams already contain. In either case an essential oil could be added to dilute the composition *; in either case heat would be necessary to effect or to assist the solution and immixture of the wax, and to render the preparation more drying. Such was the nature of the coarse varnish applied to ships: no care was necessary to prevent the zopissa from becoming black; it was probably to all appearance a pitch; but the original ingredient mixed with the wax was, according to Dioscorides, not a pitch but a resin. We now come to ship-painting.

Pliny states that wax painting with the brush, the third or later style of encaustic before described, was first adopted for ships; that, so employed, it was "proof against the sun's heat, the salt of the sea, and the winds." The effect of wax when mixed with soft resins is to check their tendency to flow when exposed even to the highest natural temperature, and to prevent their cracking on the surface.†

* Besides naphtha, the ancients, though ignorant of the progress of distillation, were acquainted with the essential oil of turpentine. The mode of collecting it was by spreading clean fleeces above the open vessels in which pitch was concocted, and then wringing out the volatile oil. See Diosc. l. i. c. 95., Plin. l. xv. c. 7.

† One of the objections to asphaltum in painting is its tendency to flow, and to dry only on the surface. The first defect is remedied by a due admixture of wax; the second can only be corrected by dryers. Wax itself has no tendency to crack; but, as it long remains soft, it is easily *made* to crack if varnished with quickly drying resins.

The vehicle used for painting had, thus, the same qualities, the same promise of durability, which recommended the common ship varnish, and was no doubt the identical zopissa, only prepared with more care, so as to be almost colourless.* The application of painting was thus secondary and accidental, and its character, from first to last, must have been humble enough; yet such embellishments, among the art-loving Greeks, are not to be estimated by modern works of the kind. Two distinguished painters, Protogenes and Heraclides, began as ship decorators.†

Such being the vehicle, the colours were not mixed for momentary occasions, but, as in modern fresco and tempera, pots of tints were prepared from the first.‡ The final inustion had the effect of

* The term zopissa may have had reference to the supposed medicinal virtues of the coarser substance which was scraped from ships, and which, being used as a medicine, could not, like the painting vehicle, have been previously mixed with colours. But the expression may have originated in the use of the cero-resinous material for painting figures; as the word zophorus (the frieze), in architecture, was appropriated to that part of the entablature where figures (ζῶα) were placed.

† "Quidam et naves pinxisse [Protogenem] usque ad annum quinquagesimum [putant]."— *Plin.* l. xxxv. c. 36. "Est nomen et Heraclidi Macedoni. Initio naves pinxit."— Ib. c. 38. They therefore began as wax painters; but the works by which they acquired their fame were chiefly, if not altogether, in tempera. Pliny's expression, before quoted, "till ships began to be painted," may be understood to mean, painted in a very ornate manner; as we read of painted ships in Homer's time.

‡ Pliny always uses the plural form, "ceræ tinguntur," "ceris pingere," whether speaking of the pencil or cestrum encaustic.

producing an apparently vitrified surface; hence the paintings could be cleaned and polished, from time to time, as required.*

A process of painting thus arising from mere utility, and at first employed in the coarsest decorations, was at length admitted among the styles of refined art. The qualities for which it was originally valued, — durability, and resistance to moisture and ordinary heat, to which may be added the facility of cleaning the surface, — were likely to be remembered in its subsequent applications. Accordingly, the first distinguished wax painter, though accustomed to the cestrum encaustic, was also the first to apply the larger style to ceilings †; and, at a later period, the same method was adopted by Agrippa, even for the walls of baths.‡ Its powerful scale of effect, as compared with tempera

* The modern mode of cleaning wax paintings (with a slight change in the materials) may exemplify the process at all times.

"Si (la peinture) est lustrée, on devra l'épousseter d'abord, puis laver la surface avec de l'eau alcoolisée, et y passer de l'eau pure à la suite : on laissera sécher, et l'on rétablira le lustre par un léger frottement. S'il s'agit d'une peinture vernie à la cire, on opérera comme pour la peinture lustrée, en observant que l'on pourroit ajouter une nouvelle couche de cire dans le cas où l'on jugerait la première insuffisante."—*Durosiez, Manuel du Peintre à la Cire*, Paris, 1844, p. 28. On the effect of the inustion, see a paper by Mr. Linton, in the Sixth Report of the Commissioners on the Fine Arts, p. 24.

† "Idem (Pausias) et lacunaria primus pingere instituit." — *Plin.* l. xxxv. c. 40.

‡ Ib. l. xxxvi. c. 64.

and secco, was a more general recommendation*: it was employed for pictures on wood, which divided the palm with the works of the great artists in the established method. In the first centuries of the Christian era, it appears to have superseded all other processes except mosaic; the durability and brilliancy (and perhaps mechanical nature) of which recommended it, in its turn, more and more.† The Lucca MS. (eighth century) treats more fully of mosaic than of wax painting; of the latter it is merely observed that colours mixed with wax were used on walls and on wood.‡ The art is scarcely alluded to in the treatises of the twelfth, thirteenth, and fourteenth centuries; and the only evidence relating to it (at present known) which can be said to belong to medieval art, consists of three notices. Two of these, from the Byzantine MS.,

* The two most celebrated encaustic painters, Pausias and Nicias, excelled in chiaroscuro. The former contrived to give relief to black objects even when foreshortened. (See Pliny's well understood description of the picture by this artist in the portico of Pompey, l. xxxv. c. 40.) The latter was also remarkable for gradation and roundness. Ib.

† The mechanical nature of the final inustion in encaustic, a process which obliterated the unskilful traces of the pencil, may also have been one of the recommendations of that art in barbarous times. An expression employed by St. Chrysostom seems to imply that he amused himself with the practice of encaustic. Ἐγὼ καὶ τὴν κηρόχυτον γραφὴν ἠγάπησα. "Ego quidem pictura cera liquenti confecta delectatus sum."—*Emeric-David, Discours*, &c. p. 182.

‡ "Ita memoramus . . . operationes quæ in parietibus, simplice in ligno, cera commixtis coloribus," &c.

and from that of Le Begue, have been already given, and neither can be said to have much affinity with the ancient method. A third document exists in the records of the Duomo of Orvieto: a wax vehicle or varnish is there mentioned as having been used by Andrea Pisano. In 1345, that painter received a certain sum "for vermilion, white lead, and *cera colla*, for painting." * In 1351, the following entry appears relating to painting and varnishing a marble statue of the Virgin over the principal door in the façade of the cathedral. "Three soldi for eggs to make, with the white, a medium for diluting the colours for [painting] the figure or image of the Virgin Mary. . . . Seven soldi and ten denari to Messer Andrea di Pisa for vermilion, white lead, and *cera colla*. . . . For two oz. of blue at six soldi the oz., a little red lead, and twelve leaves of gold at six denari for each leaf, to adorn the fair marble Majesty." † It should be observed,

* "Pro cenabro biacca et cera colla pro pingendo."— *Della Valle, Storia,* &c. p. 280.

† "Tres solidos pro hovis pro clara fienda pro coloribus liquefaciendis in figura seu imagine V. M. . . . VII. sol. et X. den. M. Andree de Pisis pro cenabro biacca et cera colla . . . . pro duabus uncis azzurri ad rat. VI. solidor. pro uncia et pro modico cerusse [ustæ] et pro XII. foliis dauro ad rat. VI. den. pro quolib. folio pro Majestate pulcra de marmore ornanda."—Ib. p. 281. Della Valle, writing at the close of the last century, states that there was scarcely a vestige of colour on this statue; but on another, which was within the cathedral, the blue (of the drapery) and some other tints yet remained.

The representation of the enthroned Saviour or Virgin Mary was called a "Maestà," as the Virgin weeping over the dead

that the term "colla," in the older documents, has not always the sense of size or glue; in the *Mappæ Clavicula* an oil varnish is called "colla Græca," and Theophilus gives the name of "gluten" to the same substance. In this case the "cera colla" was necessarily of a hydrofuge nature, as the statue was in the open air; and the colla appears to have been used as a coloured varnish over tints mixed with white of egg only. It is remarkable that precisely the same ingredients should be mentioned, together with the wax vehicle, on two occasions. The vermilion and white were evidently mixed with the wax; the varnish seems to have been employed for statues only; and such tints must have been used for the flesh, in accordance with the habits of the time; the colour of the varnish being varied for draperies and other surfaces.*

Christ was called a "Pietà." The only existing document relating to Cimabue shows that he was employed in 1301 (probably the year of his death) on a mosaic "Majesty," in the tribune of the Duomo at Pisa. One of the entries is as follows. "Magister Cimabue pictor Magiestatis pro se et famulo suo pro diebus quatuor quibus laborarunt in dicta opera ad rationem solid. x. pro die, lib. II."—*Ciampi, Notizie,* &c. p. 144. Linseed oil, varnish (vernix), and turpentine appear in these accounts also; they must have been used in the composition of the cement for the mosaic. The quantities are considerable: "Pro pretio librarum LXXVI. olei linseminis ... ad operam Magiestatis — pro pretio libre viginti novem trementine ... ad operam Magiestatis — pro pretio centinarorum quatuor olei linseminis ad operam Magiestatis et aliarum figurarum, &c., pro libris quadraginta tribus vernicis," &c.

* The expression, "variata circumlitio" (*Seneca, Epist.* 86.),

The above document may serve to illustrate the descriptions of the ancient Greek varnish, or "circumlitio," on statues. Praxiteles is said to have esteemed those of his works most which had received a varnish from the hand of Nicias.* A mere varnish might have been applied by an assistant; but the statues of the Greeks were partially and slightly tinted. The experience and taste of Nicias were indispensable, in the opinion of Praxiteles, to produce a harmonious effect on

may refer to this practice in ancient art. Descriptions of coloured varnishes, used for painting on glass, occur in the Venetian MS.; one of these might be called a *cera colla*. "Take one lb. of fine white turpentine, three oz. of white mastic if [the work is to be executed] in winter, but if in summer, two oz. will suffice; it should be well washed, and should be dried in the air, but not in the sun. Add half an oz. of new wax and a quarter of an oz. of white wax; place the ingredients in a well glazed earthen vessel, to boil on the fire," &c. "Toy una libra de fina trementina biancha e oz. III. de mastixe biancho sele de īverno ma sele de estate basta oz. II. bene lavato e asuto alora e nō al caldo, e oz. ÷ de cira nova e quarto uno de cira biancha e miti ogni cossa īsieme ī una pignatela nova bñ īvedriata e fa bolire le predicte cosse al fuoco," &c. Green (or any other colour) is then added. The composition is directed to be applied warm, on warm glass, held over a charcoal fire. The architect Rusconi speaks of a varnish used in Venice in his time on walls painted with minium, according to the method of Vitruvius. It must, therefore, have been a wax varnish. (*Architettura*, Venezia, 1590, l. vii. c. 9.) It may be remarked that mastic was used as above, for a dryer, in the eighth century. "Et si aliquid vitium postea habuerit (lucida) ut se desiccare non poteat, junge mastic quantum volueris, aut unciam unam aut mediam."—*Lucca MS.*

* Plin. l. xxxv. c. 40.

his statues, with reference to their intended situation; the varnish employed (perhaps the usual encaustic vehicle above described) contributed, at the same time, to protect the surface.* The application of the coloured "cera colla" of Andrea Pisano may give some idea of the "circumlitio" of Nicias.

Among the qualities of the Greek encaustic, the gloss which it was fitted to receive was not the least of its recommendations with the ancients. The carefully stuccoed walls of their apartments were polished like mirrors.† Their tempera pictures, by means of a varnish (which encaustic did not require), had the same shining surface.‡ The use

* The cerate, which Vitruvius says was used for statues, was chiefly intended (as in its application on walls) to renew their polish, and to protect certain colours. The tinting (*βάπτειν*) with varnish was a distinct and previous operation. That the coloured varnishes had the effect of preserving the surface of marble is apparent from the fact, that in the Greek temples, for example the Parthenon, although the colour itself is scarcely to be traced, its presence is frequently indicated by the smoothness even of the present surface, corresponding exactly with the forms of the once painted decorations.

† "Non modo fiunt nitentia, sed etiam imagines expressas aspicientibus ex eo opere remittunt."—*Vitruv.* l. vii. c. 3.

‡ Pliny, speaking of the varnish of Apelles, says: "Ut id ipsum repercussum claritates colorum excitaret — veluti per lapidem specularem."— L. xxxv. c. 36. And elsewhere: "Nec pictura in qua nihil circumlinitum est, eminet." — L. viii.; quoted by Soehnée, Recherches nouvelles sur les Procédés de Peinture des Anciens, Paris, 1822, p. 41. "Secco," or lime painting, and perhaps tempera on walls, appear to have been the only kinds of decoration which had not a glossy surface.

of encaustic and mosaic, in the early periods of Christian art, had partly the same object.* The habit is to be traced in the lustrous varnishes (*lucidæ*) of the middle ages; and there can be no doubt that thickened oils were preferred, in the first rude attempts at oil painting, chiefly because such vehicles insured this glossy appearance. The imitation of the ancients, in mere externals, is indeed to be traced in all the mechanical operations of medieval art. Smoothness of surface, on pictures as on marble, was found to resist the more immediate causes of decay; and this may be a reason why the predilection for it continued, after the revival of art, chiefly in those countries where the effects of the atmosphere are most trying.

In any view of the foregoing statements, it must be evident that the wax painting of the ancients was capable of more force, depth, and gradation, than the customary tempera. The latter had, however, the support of the highest names, those of Zeuxis, Parrhasius, Apelles, and others; painters who had established their reputation and that of their process before encaustic had time to develope itself. The practice of the latter prevailed only when art was declining, and hence, as regards the ancients, its resources were perhaps never fully displayed or appreciated. In the thirteenth century, when painting

* "Dans les siècles précédens, au lieu de dire *peindre* une galerie ou une église, on disoit la *faire jouer*, la *brillanter*." — *Emêric-David, Discours,* &c. p. 107.

began to emerge from a barbarous conventionality, the recorded fame of the greatest artists in antiquity could not fail to suggest the imitation of their usual method. Tempera was, even in Cennini's time, the most esteemed of the existing modes of art *; and, as already observed, it required all the excellence of the Van Eycks to recommend a different process. In endeavouring to dispense with the necessity of varnishing pictures in the sun, it is not impossible that those artists, versed as they were in the writings of the ancients †, may have first turned their thoughts towards the revival of a method which was altogether independent of varnish, while it rivalled its effects. Whatever may have been their experiments, they ended in adopting a process far superior to the obsolete encaustic.

* Cennini's expression, "Il lavorare di tavola è propio da gentiluomo" (c. 145.), may be compared with Pliny's, "Nulla gloria artificum est nisi eorum qui tabulas pinxere." (L. xxxv. c. 37.) The ancient author's words might include encaustic; but, as he is speaking of the art of Apelles, there can be little doubt that he meant tempera.

† See the testimony of Facius, before quoted, respecting John Van Eyck.

NOTE

ON SOME EARLY SPECIMENS OF ENGLISH ART.

As a supplement to the account of technical processes anterior to the improved method of oil painting, a notice is here added respecting some English works of the fourteenth century. They are not the only specimens extant; and it is hoped that, by inviting attention to such remains, other examples may be preserved before it is too late.

Within the south ambulatory, next the choir in Westminster Abbey, there is an elaborate work (measuring about eleven feet in length, and three in height), which appears to have originally formed part of an altar decoration: it is now enclosed under glass, and, being placed among the tombs, may be sometimes mistaken for part of a monument.

The groundwork is oak; over the joinings and on the surface of some mouldings, strips of parchment were glued. On this framework, covered with a gesso ground, various ornamental compartments and architectural enrichments are completed in relief. The larger compartments were adorned with paintings consisting of remarkably well designed and carefully executed single figures and subjects, with a gold mosaic ground. The work is divided into two similar portions; in the centre is a figure which appears to be intended for Christ, holding the globe and in the act of blessing; an angel with a palm branch is on each side. The single figure at the left end of the whole decoration is St. Peter; the figure that should correspond on the right, and all the Scripture subjects on that side, are gone. In the compartments to the left, between the figure of St. Peter and the centre figures, portions of three subjects remain: one represents the Adoration of the Kings; another, apparently, the Raising of Lazarus; the subject of the third is doubtful, though some figures remain: the fourth is destroyed. These single figures and subjects are worthy of a good Italian artist of the fourteenth century. The remaining decorations were splendid and costly: the small compartments in the architectural enrichments are filled with variously coloured pieces of

glass inlaid on tin-foil (according to the process before described), and have still a brilliant effect. The compartments not occupied by figures were adorned with a deep blue glass resembling lapis lazuli, with gold lines of foliage executed on it. The smaller spaces and mouldings were enriched with cameos and gems, some of which still remain. This interesting work of art lay neglected in a chapel near the north transept, till Mr. Blore, with the permission of the Dean and Chapter, had it placed for security in the case in which it is now seen. It is supposed to have originally formed part of the decoration of the high altar. Its date may be fixed at the close of the thirteenth, or commencement of the fourteenth, century. That the work was executed in England there can be little doubt. The use of parchment instead of cloth between the oak framework and gesso ground, and the resemblance of the coloured glass ornaments with those before described, which were found in St. Stephen's Chapel, indicate also a certain connexion with English technical peculiarities. If the artists were English, the execution proves that the painters of this country were sometimes quite equal to those of Italy in the early age to which this specimen belongs.

Another painting, less questionably English, and of more certain date, but now nearly obliterated, is the canopy of the tomb of Richard II. and Anne, his first wife, in the chapel of St. Edward in Westminster Abbey. At each end there are figures of angels supporting shields. Of the other two compartments, that near the head contains a representation of the Almighty enthroned, holding a globe and in the act of blessing: the other represents Christ and the Virgin, both seated; the Saviour holds a globe and is also in the act of blessing, the hands of the Virgin are crossed on her breast.* The action and expression of this figure, as far as can be judged from its extremely decayed state, indicate the hand of a superior painter: the ground behind all the figures is ornamented with gilt mosaic. Malcolm (*Londinium redivivum*, vol. i. p. 96.) supposes that these paintings

* The composition much resembles that of a painting (13th century) on the ceiling of a room in the hospital called "La Biloque," at Ghent. (*Kunst-Blatt*, 1843, No. 54.)

were by the same artist who executed the principal subjects in St. Stephen's Chapel. A document in the Pell Records, brought to light by Mr. Devon (of the Chapter House Record Office), determines the date of the work; the following is Mr. Devon's translation. "Michaelmas, 19 Richard II. [1396]. To Master Peter, sacrist of St. Peter's, Westminster: In money paid him by the hands of John Haxey in discharge of [a claim of] £20 for painting the canopy of the tomb of Anne, late queen of England, buried within the said church; as for the removal of a tomb near the tomb of the said queen; also for painting the same tomb so removed, and for painting an image to correspond with another of the king placed opposite in the choir of the said church." From a comparison of this with other documents Mr. Devon places the execution of the work in 1394: the painter, whoever he was, appears to have been commissioned by the sacristan acting for higher authorities.

The Chapter House at Westminster contains wall-paintings of two different periods: the earliest and best appear to have been executed about the middle of the fourteenth century. The edifice itself was completed in the time of Henry III., who began to rebuild the Abbey; in the fourteenth century it had been long appropriated to the use of the Commons in parliament assembled. In the two last parliaments of Edward III. the Commons were directed to withdraw from the Painted Chamber, "a lour ancienne place en la maison du Chapitre de l'Abbeye de Westm." * The east side of the octagon building contains five niches corresponding with the sedilia usually to be seen in chapter houses, but which here, from their painted subjects, have the appearance of an altar decoration.

In the centre niche or compartment there is, or rather was, a figure of Christ (with a gilt nimbus containing the cross) holding up his pierced hands. A scarlet robe, embroidered with gold borders, is fastened on the centre of the breast by an embossed and gilt fibula, as in Italian pictures of the time: the robe, parting

* Rot. Parl. vol. ii. p. 322–366.

again, shows the wound in the side. Two angels sustain a deep blue diapered drapery behind the figure. The instruments of the Passion are held by other angels now partly obliterated; the reed and sponge, the spear, and the nails are still visible. The face of the principal figure is destroyed, perhaps by violence. The four other compartments are filled with angels: on the right and left niches, a single central figure is prominent, standing about a head lower than the Christ; behind and below, smaller nimbi and some heads indicate the rest. The principal angels are covered with wings having eyes like those in the peacock's tail; the lower extremities of all the figures are destroyed. Among the angels, some with fiery vermilion faces represent the seraphim, in the manner of the early Italian painters. The principal angel in the niche next the centre to the right holds up two gilt crowns. On the wings of the upper angels, and round the heads of those below, is inscribed a sort of tabular view of the Christian virtues, according to the dogmas of the time. "Confessio" ramifies downwards into "simplicitas, humilitas, fidelitas;" "Satisfactio" into "orōnis devocio, eleemosina," and perhaps "jejunium," or an equivalent word now illegible. Under "Mundicia carnis" are ranged the virtues of temperance; under "Puritas mentis," those relating to the command of the will. In the centre above, the half word "... lateria" (latreia?) is visible. The corresponding angel in the niche to the left holds up an embossed crown with the left hand, and what appears to be a rosary with the right. Inscriptions on this figure have either never existed or they have perished. In the second niche to the right the figures are almost entirely obliterated; in that to the left some portions of heads remain. The general subject of this representation, therefore, is Christ surrounded by the Christian virtues: but many particulars correspond with descriptions in the beginning of the book of the Revelation, and, as the history of St. John the Evangelist is represented on other portions of the walls, they may be so interpreted.

With respect to the date of this work, Mr. Devon is of opinion that the writing in the inscriptions belongs to the time of Edward III. This agrees with the opinion expressed by Smith (*Antiquities of Westminster*, p. 226.). He formed his

conclusion from the perfect coincidence of the style and execution with the then existing remains in St. Stephen's Chapel, with which he was certainly well acquainted. The figures are by no common painter; some of the heads and hands, with all their defects, may bear a comparison with the works of the Italians of the corresponding period. The same may be said of the colouring of the flesh; the heads of the principal figures are painted with a good surface and body, probably with the peculiar vehicle before described; pure lake ("cynople"), used in certain parts of the centre subject, is well preserved, as is the gilding of the nimbi. The stone wall is covered with a coating of gesso, but there is no cloth underneath the preparation. The inscriptions, unlike those on the other representations in the building, are painted on the figures, not stuck on.

The following description of the remaining specimens in the Chapter House (which have been hitherto brought to light) is from a notice obligingly communicated by Mr. Devon, by whom they were discovered in 1841:—

"They relate to St. John the Evangelist. The first picture I found was the vision of the seven candlesticks, strictly following the description in the first chapter of Revelation, v. 13–16. There is also the figure of a 'white horse, and he that sat on him had a bow,' &c., as in the sixth chapter, second verse. St. John is also represented as writing to the seven churches of Asia, which churches are depicted, with an angel standing at each door. On the left of all this there is a representation of his being put into a caldron of boiling oil by order of the Emperor Domitian: the emperor, or rather his proconsul, dressed in ermine, is present, attended by executioners blowing the fire, ladling the oil, &c. The saint, according to the legend, came from the caldron unhurt. Tertullian is, I believe, the only early writer who mentions the circumstance; he says it took place before the gate called Porta Latina, in Rome. This corresponds with the inscription on the wall, which, copied (as far as legible), runs thus: 'Tunc proconsul secundum Impiale preceptum Beatissimum Johannem Apostolum .... itum Romani secum adduxit et Cesari Domitiano ejus adventum nunciavit indignatus autem crudelissimus Domici . . . o consuli jussit ut ante portam que Latina dicitur in conspectu senatus

in ferventi doleo Sanctus Johannes deponeret̃ pr . . . . flagellis cederetur quod et factum est unde protegente eum gracia Dei tam illesus exiit quam minimus a corrupcione ext . . . . . videns vero proconsul eum de doleo exisse cinctum non adustum obstupefactus voluit eum libertati sue restituere. Et fecisset . . . . . missione regie contradire. Hoc autem cum Domitiano relatum fuisset precepit Sanctum Johannem Apostolum in exilium . . . . insula que Pathmos dicitur in qua et Apocalipsum que et nomine ejus legitur et vidit et scripsit.'

"Another picture represents St. John landing from a vessel, probably at this island of Patmos. There are several other figures of minstrels, dromedaries, stags, dogs, birds, &c., accompanied with inscriptions, for the most part not very legible. They are written on paper stuck on the wall, which paper is now decaying and peeling off. With respect to the date of these works, I can be guided only by the handwriting, which I take to be between the years 1390 and 1470; I think not earlier than Richard II. (who came to the throne in 1377), and certainly not later than Henry VI."

This date is corroborated by some architectural forms introduced in the paintings; these the late Mr. Gage Rokewode and others pronounced to be of the fifteenth century. The great difference between these wretched productions and the large figures before described, painted in the time of Edward III., may be attributed to the accident of some unskilled monk having undertaken the decorations. For, making every allowance for the neglect of the arts which was the consequence of the distracted state of the country during the wars of the roses, it is hardly to be supposed that painting could have sunk so deplorably in so short a time.

CHAP. VII.

VASARI'S ACCOUNT OF THE METHOD OF OIL PAINTING INTRODUCED BY VAN EYCK.

The circumstances which have been detailed in the preceding chapters may now afford the means of judging of the state of art, practically considered, before the time of Hubert and John Van Eyck. The modes in which oil painting had been employed before the year 1400 have been sufficiently exemplified, and the preference given to tempera has been explained. The latter half of the fourteenth century had already been marked by innovations in technical habits. Within that period may be placed the beginning of fresco, properly so called, and the end of wax painting; for, although the limited use of the latter survived, and even survives to this day in Greece, its vestiges then ceased to be traceable, in the ordinary practice of art, throughout the rest of Europe.

Another and a more important change was at hand. Soon after the first ten years of the fifteenth century oil painting was not only rendered practicable, but the process, as such, was carried to a perfection in many respects not since surpassed. The art, recommended as it was at the same time

by new and surprising efforts in imitation, could not fail to attract attention; yet, as before stated, many years elapsed before it found general favour in Italy. There, however, as in Flanders, the first painters who applied themselves to it earnestly were not slow in discovering and displaying the fuller resources of the method as compared with tempera. Once adapted to Italian taste, subjects, and dimensions, it was received with enthusiasm; the memory of the original inventor, represented by the younger Van Eyck, was honoured accordingly; and the earliest known writers who eulogised the Flemish artist were Italians of the fifteenth and sixteenth centuries. It is not surprising that the previous imperfect attempts at oil painting should have been overlooked, or that some authors should even have gone so far as to ascribe the first invention of the oils used in painting to Van Eyck: but it is to be regretted that such assumptions, as the sufficient ground for praise, should have prevented those who were acquainted with art from informing themselves (when it would have been more possible to do so) as to the real nature of the improvement which all extolled.

The mention of Van Eyck by Facius has been already noticed. That writer gives an interesting account of some of the Flemish artist's works, when they were first seen in Italy; but, though eloquent on their general excellence, he is silent

respecting the method of oil painting: his observations may therefore, for the present, be passed over. The evidence of Vasari, in all technical questions, is of great value. His details relating to the history and works of artists are, also, generally to be relied on; he is, however, frequently at fault in dates, and, therefore, before quoting his account of Van Eyck's invention and of the introduction of oil painting into Italy, it will be necessary to establish, as far as possible, some leading epochs in the events of which he treats.

At the commencement of the seventeenth century, a monument to Hubert Van Eyck existed in the church of St. John (now St. Bavo, the cathedral,) at Ghent. On a slab inserted in the wall a figure of death was represented, holding a plate of copper inscribed with an epitaph in "old Flemish." Van Mander, who gives these details, has preserved the inscription, adding that Hubert was born in 1366. The epitaph states that he died in 1426. There is no reason to question even the former date; the portrait of the artist, introduced with that of his brother, in their great work, the altar-piece of the same cathedral*, represents a man of

* The panel which contains the portraits is now in the Gallery at Berlin. The altar-piece was completed by John, after the death of Hubert, and the portrait of the latter appears to have been a posthumous one. The evidence respecting the likenesses rests only on ancient tradition. (See Van Mander, p. 200. Compare Octave Delepierre, Galerie d'Artistes Bru-

about sixty. The following is the purport of the epitaph: —

"Take warning from me, ye who walk over me. I was as you are, but am now buried dead beneath you. Thus it appears that neither art nor medicine availed me. Art, honour, wisdom, power, affluence, are spared not when death comes. I was called Hubert Van Eyck; I am now food for worms. Formerly known and highly honoured in painting; this all was shortly after turned to nothing. It was in the year of the Lord, one thousand four hundred and twenty-six, on the eighteenth day of September, that I rendered up my soul to God, in sufferings. Pray God for me, ye who love art, that I may attain to His sight.

geois, Bruges, 1840, p. 10.) But it is to be remarked that the same two portraits (with another, supposed to be that of Margaret, the sister of the painters, and herself an artist,) appear in a picture of the crucifixion by John Van Eyck, now in the possession of Count Tatitscheff. (*Passavant, Kunst-Blatt*, 1841, No. 3.) A circumstance connected with this question deserves to be here noticed. The inscription on the picture by John Van Eyck, in the National Gallery, has generally been read, "Johannes de Eyck fecit hic, 1434." The word hitherto supposed to be *fecit* is, unquestionably, *fuit;* "hic" may therefore be translated "this [man]"; and, if so, the portraits are those of John Van Eyck and his wife. There is not much resemblance between the above-mentioned accredited likenesses and the person represented in the picture in the National Gallery; but the difference of costume and the lapse of seven or eight years may perhaps explain this. The question is submitted to those who have given much attention to the history of John Van Eyck.

Flee sin; turn to the best [objects]: for you must follow me at last." *

The periods of the birth and death of John Van Eyck were variously and incorrectly stated, from Vasari downwards, till the researches of De Bast and others established them with some certainty.†

* Spieghelt u an my, die op my treden,
Ick was als ghy, nu bèn beneden
Begraven doot, als is an schijne,
My ne halp raedt, Const, noch medicijne.[a]
Const, eer, wijsheyt, macht, rijckheyt groot
Is onghespaert, als comt de Doot.
Hubrecht van Eyck was ick ghenant,
Nu spijse der wormen, voormaels bekant
In Schilderije seer hooghe gheeert:
Corts na was yet in niete verkeert.

In 't jaer des Herren, des zijt ghewes,
Duysent, vier hondert, twintich en ses,
In de maendt September, achthien daghen viel,
Dat ick met pijnen Godt gaf mijn ziel.
Bidt Godt voor my, die Const minnen,
Dat ick zijn aensicht moet ghewinnen,
En vliedt zonde, keert u ten besten:
Want ghy my volghen moet ten lesten.

† For the communications of De Bast see the Messager des Sciences et des Arts, Ghent, 1824, p. 49. &c., and the Kunst-Blatt, 1826, No. 78. &c. For those of Director Passavant see his Kunstreise durch England und Belgien, p. 369.; and Kunst-

[a] Zich spiegelen, "to look in a mirror," is still idiomatic Dutch and Flemish for "to take warning." With a slight alteration in the spelling, als is an schijne might be translated "all is illusion." My ne halp raedt is ill spelt and obscure.

Medicine, being named together with art, appears here to represent one of the qualifications of the painter. Chemistry and medicine were, in the middle ages, often used as synonymous terms. Geber, the Arabian (eighth century), calls alchemy "medicine of the third class."

The result may be shortly given as follows. The portrait of John Van Eyck, above referred to, may represent a man of about thirty-five.* By the concurrent testimony of historians also, he was much younger than his brother. That he died, not at an advanced age, as Vasari and others assert, but in the vigour of life, and about the year 1445, is proved by various circumstances. In a register (preserved in the archives of Bruges) of a lottery which was drawn February 24. 1445, the following memorandum occurs: "the widow of John Van Eyck two pounds." † A picture by the artist,

Blatt, 1841, No. 3. &c., and 1843, No. 54. &c. On the works of the Van Eycks compare Dr. Waagen Ueber Hubert und Johann van Eyck, Breslau, 1822 ; Schnaase, Niederländische Briefe, Stuttgard und Tübingen, 1834 ; Hotho, Geschichte der deutschen und niederländischen Malerei, Berlin, 1842–43, zweiter Band ; and Alfred Michiels, Histoire de la Peinture Flamande et Hollandaise, Bruxelles, 1845—46. The fourth and concluding volume of this work is not yet published.

* The apparent age of this figure is estimated differently, according to the different hypotheses of writers respecting the period of the painter's birth. Hotho, who assumes that John Van Eyck was more than thirty years younger than Hubert, and who, with others, supposes that the portraits were painted in 1427, sees a man of the age of thirty in the figure in question. Michiels, who is desirous that John, and not Hubert, should be considered the inventor of oil painting, places the birth of the former in 1386 (ten years earlier than Hotho). In his eyes, therefore, the portrait must represent a man of about forty. A middle course may be nearer the truth. The claims of Hubert, as the inventor of the improved oil painting, rest on other evidence about to be noticed.

† "De wed Jans van Eyck ij. pont."—*De Bast, Kunst-Blatt.*

originally in the church of St. Martin, at Ypres, was left unfinished in 1444.* Flemish authors who preceded Van Mander state that Van Eyck died "early," † and (with reference to his powers and activity) "young." ‡ A passage in his epitaph appears to refer to the same circumstance. Van Mander himself, who in one passage follows the Italian biographer in regard to the painter's age, in another remarks that "Johannes did not live so long, by many years, as Vasari states." § John Van Eyck was probably born within the years

The document gives the above date; but as the year was then reckoned to begin at Easter, this was the beginning of 1446 according to the present style. Passavant (ib. 1843, No. 55.) assumes that John Van Eyck died in July, 1445, on the ground that a mass was said for the painter yearly in July, in the church of St. Donatus, at Bruges, till near the close of the last century.

* Passavant, Kunstreise, p. 367.

† "This noble flower departed early from this world." "Van deser weerelt vroegh dees edel bloeme schiedt." This passage occurs in a poem by Lucas de Heere (the painter), and is quoted by his scholar Van Mander (*Schilder-Boeck*, p. 201–2.). The latter, in a marginal note, hesitates to admit the statement; but his objections are founded on Vasari's account.

‡ "Johannes died young; could he have lived longer, he would (as is said of Athemon) easily have surpassed all the painters of the world." "Johannus is jonc overleden, hadde hy noch mogen leven, hy hadde (alsoomen van Athémon seyde) lichtelyk alle schilders der werelt te boven ghe-gaen." — *Markus van Vaernewyck, Historie van Belgis*, Ghendt, 1565. De Bast. "Athémon" may be intended for the Artemon of Pliny.

§ "En weet oock dat Joannes soo langhe niet en leefde, op veel jaren, als Vasari den tijt stelt." — *Schilder-Boeck*, p. 200.

1390 and 1395.* Supposing the portraits above mentioned to have been painted soon after the death of Hubert (for they are unquestionably by the hand of John), this would make the latter about thirty-five, the apparent age of his own portrait, when they were executed, and about fifty-four at his death. A Latin epitaph on John Van Eyck was once to be seen on a pillar in the church of St. Donatus, at Bruges, where he was buried. The church itself no longer exists; the inscription is given by Van Mander, and is in substance as follows: —

"Here lies Johannes, who was celebrated for his surpassing skill, and whose felicity in painting excited wonder. He painted breathing forms and the earth's surface covered with flowery vegetation, completing each work to the life. Hence Phidias and Apelles must give place to him, and Polycletus be considered his inferior in art. Call, therefore, the Fates most cruel, who have snatched from us such a man. Yet cease to weep, for destiny is immutable; pray only now to God that he may live in heaven." †

It is not to be supposed from the classic hyperboles (conveyed in no very classic form) in this

* Compare Rathgeber, Annalen der Niederländischen Malerei, Gotha, 1844, p. 30.

† "Hic jacet eximia clarus virtute Joannes,
In quo picturæ gratia mira fuit;
Spirantes formas et humum florentibus herbis
Pinxit, et ad vivum quodlibet egit opus.

inscription, that John Van Eyck was particularly conversant in sculpture: the allusion to his treatment of landscape is more characteristic.

All writers agree that (the improved) oil painting was first introduced about the year 1410. The earliest work extant, painted in the method, is in the possession of Director Passavant, at Frankfort. It is by Peter Christophsen (called by Vasari, Pietro Crista), a scholar of Hubert Van Eyck, and has the date 1417. The invention can, therefore, hardly be placed later than 1410. At that time John Van Eyck, according to the above chronology, was not twenty years old. It would thus appear that Hubert was the real inventor. The great, if not superior, merit of the younger brother, who survived the elder nearly twenty years, and the fact that the works of the former only were known in Italy, account for his having there superseded all other claims.* Antonello

Quippe illi Phidias et cedere debet Apelles ;
Arte illi inferior ac Policretus [sic] erat.
Crudeles igitur, crudeles dicite Parcas,
Quæ talem nobis eripuere virum.
Actum sit lachrymis, incommutabile fatum,
Vivat ut in cœlis jam deprecare Deum."
Van Mander, Schild. p. 202.

Delepierre (*Gal. d'Art. Brug.* p. 11.) observes that this inscription was destroyed during the wars of the iconoclasts.

* Among the masterworks of Hubert Van Eyck may be mentioned the principal large figures in the Ghent altarpiece. Fuseli, who saw those works while they were in the

da Messina, who communicated the Flemish process to the Italians, had known John Van Eyck only; Hubert he had never seen. Vasari, in the original edition of his work, does not even mention Hubert; the name appears for the first time in the account (inserted in the second edition) of various Flemish artists, — an account which, as the author tells us, was in a great measure supplied by Flemish authorities. The passage in question, taken literally, ascribes the honour to Hubert; but the words are brief, and the older and more important narrative, about to be examined, remained unaltered.*

The opinion that the chief credit of the invention is due to Hubert receives additional confirmation from the fact, that the bones of the arm and hand

Louvre, speaks of them as follows. "The pictures here exhibited as the works of Hemmelinck, Metsis, Lucas of Holland, A. Dürer, and even Holbein, are inferior to those ascribed to Eyck in colour, execution, and taste. The draperies of the three on a gold ground, especially that of the middle figure, could not be improved in simplicity or elegance by the taste of Raphael himself. The three heads . . . are not inferior in roundness, force, or sweetness, to the heads of L. da Vinci, and possess a more positive principle of colour." — *Knowles's Life of Fuseli;* quoted by Sir E. Head, in his notes to the translation of Kugler's Handbook of Painting, vol. ii. p. 60.

* "Lasciando adunque da parte Martino d' Olanda, Giovanni Eick da Bruggia, ed Huberto suo fratello, che nel 1510 [1410] mise in luce l' invenzione e modo di colorire a olio, come altrove s' è detto," &c. "Mise" strictly refers to Hubert alone. The blunder in the date is treated with undue severity by Van Mander, as in this case it could only have been an oversight of the transcriber or printer.

of that painter were still preserved and exhibited to view, in the sixteenth century, near the church in which he had been buried†; as if that hand was regarded as the instrument which had prepared the way for the excellence and fame of the greatest artists. The allusion to his skill in medicine (chemistry) in his sepulchral inscription, if that passage has been rightly interpreted, is not unimportant. This merit also seems to have been afterwards transferred to the younger brother.

Among the events in John Van Eyck's life which can now be recorded on documentary evidence, may be mentioned his visit to Portugal, for the purpose of taking the portrait of the Infanta Elizabeth, daughter of John I., before her marriage with Philip the Good, Duke of Burgundy. The embassy, accompanied by the artist, left Flanders in October, 1428, and returned on Christmas day, 1429, bringing the bride herself, the portrait having preceded her some months.*

We now come to Antonello da Messina, the artist who had the good fortune (for his merit was not otherwise extraordinary) to introduce oil painting into Italy. Here, again, the chronology of Vasari requires to be amended, although his account, in

* M. Van Vaernewyck, quoted by Rathgeber, Annalen, p. 5.

† Gachard, Collection de Documens inédits concernant l'Histoire de la Belgique, t. ii. p. 63.; quoted by Passavant, Kunst-Blatt, 1841, No. 3.

the main, may be shown to be historically true. Without anticipating that account in other respects, it is to be observed that the fact of Antonello having studied for a time with John Van Eyck is supported by the peculiar character of his works, which bear a close resemblance to the style of the Netherlands, as distinguished from that of the contemporary Italian painters.* That he was the first to communicate the improved oil painting south of the Alps is sufficiently established by the universal testimony of Italian writers: other circumstances, hereafter to be noticed, are not wanting to confirm the fact. It appears that he remained some years in Flanders after the death of Van Eyck.† On his return to Italy, probably about 1455‡, he made a short stay in Venice, com-

* A portrait in the Berlin Gallery, by this artist, inscribed "Antonellus Messaneus me pinxit, 1445," must have been painted in the Netherlands. His picture of the Crucifixion, formerly in the Ertborn collection, now in the Academy at Antwerp, was at one time the subject of a lively controversy; not as to its originality (of which there was never any question), but its inscribed date, which was by many read 1445. There can be no doubt that it is now 1475. If it was originally so written (for there is reason to suppose that it was partly effaced in cleaning), the picture must have been painted in Italy, and probably at Venice. The inscription is, "Antonellus Messaneus me o° [oleo] pinxt."

† See an extract from a MS. given by De Bast in his observations before quoted.

‡ Lanzi supposes about 1450; but there is no evidence of oil pictures having been painted in Italy (by Italians) till after

municating his secret to a painter who carried it to Florence. Antonello soon after revisited his native place (Messina). There, it seems, he remained, not some months, as Vasari states, but several years. Returning to the North of Italy, he fixed himself, for a time, at Milan*, but finally removed to Venice, where he painted several pictures, the date of the earliest being 1474.† He died in Venice, certainly not before 1493. His visit to Flanders may have been undertaken when he was about the age of thirty.‡

Vasari is not the earliest Italian writer who has spoken in praise of Van Eyck, but he is the first who has given an account of the invention of oil painting. The period when he wrote, as compared with the date of the Flemish artist, and the opportunities which were available for him in collecting the information thus communicated, remain to be considered. Vasari was born in 1512: his celebrated work, *The Lives of the Architects, Painters,*

1455. The first works of the kind which attracted attention were executed in Florence, between that period and 1460.

* "Mediolani quoque fuit percelebris." — *Maurolico, Hist. Sican.*, quoted by Hackert, Memorie de Pittori Messinesi. Napoli, 1792. Compare Lanzi, Storia, vol. ii. p. 242.

† It is a portrait of a young man, and is inscribed "Antonius Messaneus me pinxit anno 1474." The picture, once in the Casa Martinengo at Bologna, is now said to be in the collection of Count Portalis. Passavant, Kunst-Blatt, 1841, No. 5. Compare Lanzi, Storia Pitt. vol. iii. p. 27.

‡ See Memorie Istorico-critiche di Antonello degli Antonj Pittore Messinese, compilate dal Cav. Tommaso Puccini. Firenze, 1809.

and Sculptors, was completed and given to a friar to transcribe in 1547*, and was first published in 1550.† It had occupied him for some years; but, in any view of the subject, nearly a century from the time of (John) Van Eyck's death must have elapsed, before the Florentine biographer can be supposed to have obtained the account which he has transmitted us respecting that painter.

The sources whence the historian derived his information are adverted to by himself. In the second edition of his work, in which he gives his own life, Vasari states that he had from early youth been in the habit of collecting notes relating to the history of art. He elsewhere observes that he had been personally acquainted with the greater part of the Flemish artists who, in his time, had visited Italy.‡ He mentions, more particularly, that in 1532 he knew Michael Coxcis (who afterwards copied the celebrated altar-piece, before mentioned, by the Van Eycks, at Ghent, when, as Van Mander relates, Titian supplied him with a valuable blue colour for the drapery of the Virgin§); that two

* Descrizione delle Opere di Giorgio Vasari. His own life, inserted in the second edition, is so entitled. On the authorities consulted by Vasari generally, see Fiorillo's Kleine Schriften artistischen Inhalts, vol. i. p. 83.

† Firenze, Lorenzo Torrentino.

‡ An additional notice of the Flemish artists in the second edition is headed "Di Diversi;" in later republications, "Di diversi Artisti Fiamminghi."

§ Van Mander states that the colour was found in the

celebrated Flemish glass-painters had copied from his own designs; that he was intimate with John Calcar (van Kalcker) and others.* The additional notices on the German and Flemish artists, given in his second edition, were furnished, he observes, by Stradanus (Van Straet) of Bruges, who was his scholar for ten years; by John of Bologna, born at Douay; and, further, by Lampsonius of Liege (originally of Bruges), who corresponded with him, and who says, in a letter quoted by Vasari, that he had read and re-read the *Lives of the Painters*.†

It is important to observe that the account of Van Eyck's invention appears in the second edition of Vasari, nearly in the same form as in the first. It may hence be inferred that the Flemish friends of the biographer, who, like Lampsonius, had attentively read the first edition (or at all events the passages relating to the artists of their own country), had found but little which their knowledge enabled them to amend, in the narrative relating to Van Eyck. At the same time it should be noticed, that Vasari, in some instances, omitted to make full use of the corrections with which he was furnished. Thus, when he speaks of oil painting as

mountains of Hungary, and was easily obtained before the Turks had possession of the country; but that, at the period in question, it was extremely dear. It appears to have been "Azzurro della Magna," not ultramarine.

* Vasari, Di div. Art.

† Ib.

the invention of Hubert Van Eyck, he adds, "as is elsewhere related;" thus showing, either that he had intended to correct, in this particular, other passages in his work, or that he fancied his history to be more consistent than it is. Numerous as his correspondents and contributors were, it must also be admitted that they were not all qualified to give him accurate information. Lampsonius, for example, who had written poetical eulogies on the artists of the Netherlands, and who might therefore be supposed to be well versed in their history, is among those who attribute the invention of oil painting, in the literal sense, to John Van Eyck.* The real authorities of the historian must therefore be sought among those who were accessible to him at an earlier period. Lampsonius, Van Straet, and others, (though useful in communicating intelligence respecting the Flemish artists of their own time,) were only known to Vasari after his first edition was published, and therefore were not responsible

* His inscription under the portrait of John Van Eyck (quasi ipse loquens) begins : —

> " Ille ego, qui lætos oleo de semine lini
> Expresso docui princeps miscere colores," &c.

See his Elogia in Effigies Pictorum celebrium Germaniæ inferioris. Antv. 1572. Lampsonius was also the author of a life of Lambert Lombard, painter and architect, of Liege. His general qualifications may be estimated by the fact that he was for some years the companion of Cardinal Pole in England, and afterwards secretary to three successive bishops of Liege.

either for the merits or defects of the original narrative.

Among the authorities accessible to the historian at an earlier period, the safest were perhaps to be met with in Venice. There Antonello da Messina died, after having freely communicated the result of his Flemish studies, near the close of the fifteenth century. Vasari was first in Venice in 1542*, and may have corresponded with Venetian artists much earlier. In his address "Agli Artefici ed a' Lettori," at the end of the first edition, he states that he had employed ten years, in various parts of Italy, in collecting materials for his biographies; and that he was always careful to consult the oldest artists, and persons most worthy of credit. It may therefore be presumed that his journey to Venice, before the completion of his work, was undertaken partly with a view to render his intended publication as correct as possible. In Venice he could converse with some "oldest artists," who may have heard from Antonello da Messina himself the narrative of that painter's journey to Flanders, and the description of the method which Van Eyck had taught him.

Among other evidences which the biographer says he had been careful to collect, were sepulchral inscriptions. Unfortunately, this appears to have been less for the purpose of establishing facts, than to preserve the commonplace tributes of praise

* See Vasari's account of his own life and works.

which distinguished artists had received from their fellow-citizens. The epitaph on Antonello is copied by him as usual. It is not clear from Vasari's statement, whether that inscription existed in a church in Venice, or whether it was a temporary mark of respect on the occasion of the Sicilian artist's funeral. It matters not which, provided it was then written; and indeed it cannot be supposed that Vasari would presume to invent such a document, at a time when the fraud could have been so easily detected. The tenour of that inscription corroborates his account of Antonello as the earliest Italian oil painter. Sansovino, without mentioning the epitaph, remarks even that Antonello was the inventor of the process.* This, though untenable in itself, confirms the tradition that he was the first who practised it in Italy. It should not be omitted, that, although Vasari speaks of Italian artists who had made attempts to improve the methods of painting which existed before Van Eyck's time, he acknowledges that they had failed. Subsequent writers have endeavoured to show that painters of almost every Italian school had known and practised oil painting before 1400 (which, in a certain sense, is quite possible); but Vasari, who was sufficiently jealous of the honour of Italy, gives

* Venetia descritta, 1604; quoted by Puccini, Memorie, &c. p. 23. The same assertion appears in two other writers, quoted by Fiorillo, Kleine Schriften, &c. vol. i. p. 196.

the credit of the invention, whatever it was, unhesitatingly to Van Eyck. The inference is that he had satisfactory evidence of the truth of his statement.

Such are among the grounds on which it appears reasonable to conclude that Vasari's account of the method of oil painting, introduced by Van Eyck, was derived from good authority; and that having passed through some critical ordeal, and having been reprinted, after an interval of eighteen years*, without material change, it was by competent judges acknowledged to be generally correct. Van Mander, who may be considered in some sense the Vasari of the Netherlands, and who was himself a painter, in his account of Van Eyck copied almost verbatim the statement of the Florentine relative to the invention of oil painting.

A nearer approach to truth on such a question is still desirable, and is fortunately not unattainable. Errors in chronology can, in most instances, be rectified in Vasari's narrative. Certain contradictions and ambiguities will be explained, where explanation is possible, in due order. It may be generally observed that the historian's chief difficulty was of his own making. He chose to assume that Van Eyck's method was that which "all the painters of the world," to use his own words, had sought for; and which, once found, had been every

* In Fiorenza, appresso i Giunti, 1568.

where permanently adopted. The incongruities in his statement arise, in a great measure, from this cause. Long before he visited Venice, perhaps even before Antonello had ceased to exist, the great artists who founded the Venetian school had taken the system of oil painting into their own hands, and had modified it considerably. The same degree of change, though of a different kind, had taken place in Florence and in Milan. It is indeed apparent from Vasari's narrative, that he is, as it were unconsciously, describing a method different from any commonly practised in Italy in his time. His occasional attempts to reconcile this contradiction are the chief causes of the ambiguities referred to.

Vasari's most circumstantial account of the invention attributed to Van Eyck is introduced in the life of Antonello da Messina. It will be desirable to give this short history as nearly as possible in the biographer's own words. The investigations which some statements contained in it may suggest, bearing on the general inquiry proposed, will then be resumed.

"Life of Antonello da Messina.

"When I consider the many valuable qualities with which different masters, followers of this second manner*, had enriched the art of painting,

* The "second manner," in the language of Vasari, means the chief direction of Italian art during the fifteenth century; its limits may be defined by the respective dates of Masaccio and

I cannot but acknowledge the importance of their labours, and give them all credit for their zeal and industry; for their sole object was the improvement of the art, in aiming at which they were regardless of trouble or cost, or of their own personal advantage.

"The mode of painting in tempera, which had been adopted by Cimabue from the Greeks about the year 1250*, was followed by Giotto, and those succeeding masters who have hitherto occupied our attention; and it still continued to be the only method in use for paintings on wood and on cloth. The artists were, nevertheless, aware that pictures so executed were deficient in a certain softness, and in vivacity; and felt that, if a proper method could be discovered which would admit of blending the tints with greater facility, their works would be improved both in form and colour; the earlier practice having always been, to produce the requisite union of the tints by hatching with the point of the brush. But, although many had tried ingenious experiments with a view to such improvement, none had invented a satisfactory process; neither by using liquid varnish or other kinds of colours, mixed with the tempera vehicles.†

Luca Signorelli. It is opposed to the manner of the Giotteschi on the one hand, and to that of Leonardo da Vinci on the other.

* According to Vasari himself, Cimabue was born in 1240.

† "Ne usando vernice liquida o altra sorte di colori mescolati nelle tempere."

"Among those who had in vain tried these or similar methods were Alesso Baldovinetti, Pesello, and many others: but no works produced by them possessed the pleasing effect, and improved qualities which they sought; and, even if those artists had succeeded in their immediate object, they would still have been unable to give the same stability to paintings on wood which those executed on walls possessed. They could not, by such methods, render pictures proof against wet, so as to allow of their being washed without danger of removing the colour; nor was the surface so firm as to resist sudden shocks when the works were handled. These matters were often the subject of fruitless discussion when artists met together; and the same objects were proposed by many eminent painters in other countries besides Italy, in France, Spain, Germany, and elsewhere.

"While things were in this state, it happened that Giovanni of Bruges, pursuing the art in Flanders, where he was much esteemed on account of the skill which he had acquired, began to try experiments with different kinds of colours, and, being fond of alchemy [chemistry], to prepare various

First edition. "Ne con vernice liquida, ne con altra sorte di olii mescolati nella tempera." The word "colours," in the later edition, is unmeaning; but Vasari appears to have substituted it for "oils," to suit the views of those, such as Lampsonius, who attributed the actual invention of oil painting to Van Eyck.

oils for the composition of varnishes, and other things*; researches which ingenious men, such as he was, are wont to make. Having on one occasion, among others, taken great pains in executing a picture on panel, and having finished it with especial care, he varnished it, and placed it in the sun to dry†, as is the custom: but, either because the heat was too great, or perhaps because the panel was ill put together, or the wood not sufficiently seasoned, it unfortunately split open at the joinings. Giovanni, seeing the damage which the heat of the sun had occasioned to the picture, determined to have recourse to some expedient or other to prevent the same cause from ever so injuring his works again; and, being not less dissatisfied with the varnish than with the process of tempera

* "Si mise . . . a provare diverse sorti di colori, e come quello che si dilettava dell' archimia, a far di molti olii, per far vernici, ed altre cose." First edition: "e cercava di trovare diverse sorti di colori, dilettandosi forte della archimia, e stillando continovamente olii per far vernice e varie sorti di cose." The word "stillare" is used by Italian writers in various senses, besides the chief meaning, "to distil;" but Vasari, either from his own judgment, or at the suggestion of his Flemish friends, removed the expression in his later edition, lest it should be supposed that Van Eyck distilled the (fixed) oils. The practice was not uncommon in Vasari's time, but is quite opposed to that of Van Eyck. The above is the most important of the few corrections which the biographer thought it necessary to make in the reprint of this portion of his work.

† . . . "le diede la vernice, e la mise a seccarsi al sole, come si costuma." First edition: . . . "le volse dare la vernice al sole, come si costuma alle tavole."

painting, he began to devise means for preparing a kind of varnish which should dry in the shade, so as to avoid [the danger incurred by] placing his pictures in the sun. Having made experiments with many things, both pure and mixed together, he at last found that linseed oil and nut oil, among the many which he had tested, were more drying than all the rest. These, therefore, boiled with other mixtures of his, made him the varnish which he, nay, which all the painters of the world, had long desired. Continuing his experiments with many other things, he saw that the immixture of the colours with these kinds of oils gave them a very firm consistence, which, when dry, was proof against wet; and, moreover, that the vehicle lit up the colours so powerfully, that it gave a gloss of itself without varnish; and that which appeared to him still more admirable was, that it allowed of blending [the colours] infinitely better than tempera.*

* "Onde poi che ebbe molte cose sperimentate, e pure, e mescolate insieme, alla fine trovò, che l' Olio di Seme di Lino, e quello delle Noci, fra tanti che n' haveva provati, erano più seccativi di tutti gl' altri. Questi dunque, bolliti con altre sue misture, gli fecero la vernice, che egli, anzi tutti i pittori del mondo havevano lungamente desiderato. Do, o fatto sperienza di molte altre cose, vide che il mescolare i colori con queste sorti d' olii dava loro una tempera molto forte; e che secca non solo non temeva l' acqua altrimenti, ma accendeva il colore tanto forte, che gli dava lustro da per se senza vernice. Et quello che più gli parve mirabile, fu che si univa meglio che la tempera infinitamente."

This well known and remarkable passage is the same in both

Giovanni, rejoicing in this invention, and being a person of discernment, began many works, and filled all the neighbouring provinces with them, giving the greatest satisfaction, and deriving no small benefit from his labours; while, daily assisted by experience, he went on still producing greater and better things.

"The fame of Giovanni's invention being soon after spread, not only in Flanders, but throughout Italy and many other parts of the world, the greatest curiosity prevailed among the artists to know by what means he rendered his productions so perfect. Those artists, however, seeing the works, and not knowing what [materials] he had employed, could only extol his merit, and give him the homage of their praise, while at the same time they were inspired with emulation; the more so, because, for a time, he would suffer no one to see him at work; nor would he consent to teach any person his secret.* But, having become old, he

editions; some slight verbal alterations making none whatever in the sense. The words, "anzi che tutti i pittori del mondo," are an addition and an unimportant one. The statement respecting the experiments with the oils relates only to the testing of their relative drying qualities. Vasari well knew that the varnish which Van Eyck and others had been in the habit of using (and which had been used for centuries) was partly composed of linseed oil. This subject will be further considered in the next chapter. It will be observed that Vasari, in this passage, uses the word tempera first in a general, and then in a particular, sense.

* This statement is incorrect; Hubert Van Eyck must have

made a favour of imparting it at last to Ruggieri [Roger] of Bruges, his scholar. Ruggieri communicated it to Ausse *, who studied under him, and to others who have been mentioned in the introduction, where, in treating of the practice of art generally, oil painting is described.

" Notwithstanding all this, although merchants made these works an object of traffick, and sent them to all parts, for sovereigns and distinguished persons, to their own great profit, the art did not find its way out of Flanders; and, although the pictures thus sent had that pungent smell which the immixture of colours with the oils gave them, especially when the works were new, so that it appeared possible to detect the ingredients, yet the discovery was not made during many years. But some Florentines, who trafficked in Flanders and in Naples, having sent to Alphonso I. of Naples a picture on panel, with many figures painted by Giovanni in oil, a work which, on account of the

communicated the process freely to his scholars. Among these were Peter Christophsen, Gerard van der Meire, and probably Justus van Ghent (called by Vasari, Giusto da Guanto); the first has been already mentioned as the author of an oil picture, dated 1417. Gerard van der Meire is supposed to have assisted in painting the Ghent altar-piece. (*Kunst-Blatt*, 1826, No. 81. 1833, No. 82—85.) De Bast also quotes some contracts, dated 1419, 1434, in which certain artists engage to repair or execute pictures with " good oil colours." (Ib. 1826, No. 81.; 1843, No. 55.)

* Ausse was probably a misprint for Ansse, Hans [Memling]; but it is uncorrected in the second edition.

beauty of the figures, and the new invention in colouring, was greatly valued by that monarch*, all the painters of the kingdom went to see it, and it was by all highly extolled.

"At this time, one Antonello of Messina, a person of an intelligent active spirit, and very sagacious, moreover not unskilled in his profession, having studied drawing for many years in Rome, had established himself at first in Palermo (where he had been employed for some time), and ultimately in Messina, his native place; in which city he had,

* Alphonso V. of Arragon (or I. of Naples) expelled Réné of Anjou from Naples, and made himself master of the kingdom in 1442. Three years remain (between that period and the death of Van Eyck) for the picture in question to arrive, and for Antonello da Messina to proceed to Flanders to learn the method of oil painting. De Bast supposes, however, that Vasari may have been misinformed on this point, and that pictures by Van Eyck were more likely to be sent to Réné of Anjou, who himself painted according to the Flemish method, and who might have recommended Antonello to the Flemish artist. In that case the period in which Antonello may have proceeded to Bruges would be within the years 1438 and 1442, the duration of Réné's sovereignty in Naples. (*Kunst-Blatt*, 1826, No. 84.)

Facius, the historian (or rather one of the historians) of Alphonso, describes a picture by Van Eyck, in the possession of that monarch. "Ejus est tabula insignis in penetralibus Alphonsi regis." It was a triptych; the principal subject was the Annunciation, the others St. John the Baptist, and St. Jerome; on the outside were the portraits of Lomellinus and his wife. Lomellinus was probably the merchant for whom the picture was painted. There can be little doubt that this was the work which Antonello da Messina saw. (*Facius de Viris Illustribus*, p. 46.)

by his works, confirmed the good opinion there entertained of him as to his ability in painting. This person, happening to go to Naples on some affairs, heard that the above-mentioned picture by Giovanni of Bruges had been received from Flanders by the King Alfonso; that it was painted in oil, in such a manner that it could be washed [with safety]; that its surface was in no danger from any shock; and that it was, besides, a very perfect work. Antonello, having made interest to see it, was so struck with the vivacity of the colours and the beauty and harmony of that painting, that, putting aside every other avocation and thought, he at once set out for Flanders. Arrived in Bruges, he assiduously cultivated the friendship of Giovanni, presenting many drawings to him executed in the Italian style, and other things; so that Giovanni, in return for these attentions, and also because he found himself already old, was content that Antonello should see the method of his colouring in oil. The latter, in consequence, did not quit Flanders till he had thoroughly learned that process — the great object of his wishes. Giovanni dying soon after, Antonello left Flanders, to revisit his native place and to communicate to Italy so valuable a secret. After remaining a few months in Messina, he proceeded to Venice, where, being addicted to pleasure, he determined to reside and end his days, having found a mode of life which suited his inclinations. There, resuming his occupation, he

painted several pictures in oil, according to the method which he had learned in Flanders. These pictures are spread among the houses of the Venetian nobility, and, from the new mode in which they were executed, they were much prized. Many other works of his were sent to various places. At length, having acquired considerable reputation in Venice, he was commissioned to paint a picture (on wood) for S. Cassiano, a parish of that city.* He executed the work with all the ability he possessed, sparing no time to render it complete. When it was finished, it was greatly commended from the novelty of that style of colouring and the beauty of the figures, which were well drawn; and, as it was then understood that he had been the means of introducing the new secret to Venice from Flanders, he was esteemed and treated with attention by the most distinguished inhabitants, as long as he lived.

"Among the painters who were then in repute in Venice, a certain Maestro Domenico was considered very excellent. On the arrival of Antonello in Venice, this person treated him with the greatest attention, such as bespeaks a warm friendship. Antonello, not willing to be outdone in kindness by

* Morelli (*Notizie d' Opere di Disegno*, Bassano, 1800, p. 189.) proves that this picture, mentioned by various writers with praise, was still in the church of S. Cassiano at the close of the sixteenth century. In Ridolfi's time (1646) it had disappeared.

Maestro Domenico, after a few months taught him the secret and method of colouring in oil. No courtesy or kindness soever could be more acceptable to Domenico than this; since it was the means, as he had hoped it would be, of establishing his reputation in his native place. And certainly those persons err greatly who are avaricious of that which costs them nothing, while they imagine that, merely for their own sake, they themselves are to be served by every body. The attentions of Maestro Domenico had the effect of winning from Antonello that which he had gained for himself with so much assiduity and labour, and which perhaps he would have given to no other for a large sum of money. But I shall speak of Maestro Domenico in due time, of the works which he executed in Florence, and of him* to whom he liberally imparted what he himself owed to the kindness of another.

"Antonello, after having painted the altar-piece of S. Cassiano, executed many pictures and portraits for various Venetian noblemen; and M. Bernardo Vecchietti, a Florentine, has by him, two very beautiful figures of S. Francesco and S. Domenico, represented in the same picture.† Afterwards, at

* Andrea dal Castagno, who, according to Vasari, murdered Domenico after having gained his secret.

† This picture is now in the possession of Messrs. Woodburn. It contains two heads only, one representing a Franciscan friar, the other a canon of St. John Lateran; it is described by Borghini, *Il Riposo*, Milan, 1807, vol. ii. p. 104. See also the last Florence edition of Vasari, Vita di Ant. da Messina.

the time when the Signoria [Venetian government] commissioned him to paint some subjects in the ducal palace—subjects which they had refused to give to Francesco Monsignore, of Verona* (though that painter was warmly recommended by the Duke of Mantua)—Antonello was attacked with a pleurisy, and died at the age of forty-nine†, before he had begun the work. The painters evinced their respect for his memory at his funeral, in consideration of the gift which he had made to art in the new mode of colouring, as this epitaph testifies:—

'DEO OPTIMO, MAXIMO.

Antonio the Painter, the chief ornament of his native Messina, and of all Sicily, is buried in this spot. He is not only honoured with the lasting respect of his profession on account of the singular skill and grace which his pictures exhibit, but also

* Vasari speaks of Monsignore in the Life of Fra Giocondo, and observes that he first entered the service of the Duke of Mantua in 1487.

† The ducal palace was partly destroyed by fire in 1483. The new building was completed in 1493; after which period, therefore, Antonello must have prepared to execute his commission. His death may have happened in the same year or later, but not before. Supposing him to have been about thirty when he first visited Flanders, he would have been about seventy-nine in 1493. Puccini (*Memorie*, p. 61.) supposes Vasari's 49 to be a misprint for 79; but the Roman numerals XXXXIX. in the first edition render this supposition improbable. Among the later works of Antonello, Ridolfi (*Le Meraviglie dell' Arte*, Ven. 1648, vol. i. p. 48.) mentions a fresco at Treviso, painted in 1490.

because he was the first who conferred splendour and durability on Italian painting, by the immixture of colours with oil.' *

"The death of Antonello was regretted by many of his friends, and particularly by Andrea Riccio †, the sculptor, who executed the two statues of Adam and Eve in the court of the Palazzo della Signoria, and which are considered beautiful works. Such was the end of Antonello, to whom certainly our artists are not less indebted for having introduced the mode of colouring in oil into Italy, than to Giovanni of Bruges for having first invented it in Flanders; both having been the means of enriching and benefiting the art: for by means of this invention painters have attained such excellence that

* "D. O. M.

Antonius pictor, præcipuum Messanæ suæ et Siciliæ totius ornamentum, hac humo contegitur. Non solum suis picturis, in quibus singulare artificium et venustas fuit, sed et quod coloribus oleo miscendis splendorem et perpetuitatem primus Italicæ picturæ contulit, summo semper artificum studio celebratus."

† Andrea Riccio was born in 1470. (*Scardeonio de Antiq. Patav.* l. iii. p. 375., quoted by Puccini.) Vasari may have intended to speak of Antonio Rizzo, whose name is inscribed on the statue of Eve above mentioned; that artist was living and in full activity in 1496. (*Puccini*, ib.) Thus the supposition that Antonello may have died after 1493 is invalidated by no circumstance. On the contrary, the anonymous author of the *Memorie de' Pittori Messinesi*, Mess. 1821, p. 19., quotes a picture by Antonello, inscribed 1497, and even refers to writers who prolong his life to 1501. Gallo (*Annali di Messina*), with more probability, states that he died in 1496.

they have almost made their figures living. The method deserves to be the more esteemed, in as much as no writer attributes this mode of colouring to the ancients. If it could be ascertained that the process was really unknown to them, that circumstance would of itself give a pre-eminence to the art of this century over the excellence of the antique. But since nothing is said which has not been said before, so perhaps nothing is done which has not been before done.* I therefore leave the question to its own merits, and, always giving highest praise to those who still add some quality to the art besides drawing, I proceed to write of others."

NOTE

ON THE INTRODUCTION OF OIL PAINTING INTO ITALY.

It has been already stated that the first Italian oil paintings of which we have any distinct notice were executed at Florence between the years 1455 and 1460. The nature of those works, the character of the artists employed, and the traditions of their process, will be considered at large in the second volume of this work. A few circumstances may be noticed here respecting the introduction of oil painting in other parts of Italy, and particularly in Naples. A letter (quoted by Puccini and Lanzi), dated 20th March, 1524, and addressed by a Neapolitan, Sum-

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* Lampsonius (perhaps copying Vasari), in his eulogy on John Van Eyck, expresses the same doubt:—"Atque ipsi ignotum quondam *fortassis* Apelli."

monzio, to a Venetian writer, Marcantonio Michele, contains the following passage :—"From that period [1386—1414] we have had no one till the time of Maestro Colantonio, our Neapolitan, with so much inclination for painting ; and, if he had not died young, he might have done great things. It was the fault only of the times in which he lived, that Colantonio did not attain to the perfect drawing which we see in the antique, and which was possessed [in a greater degree] by his scholar, Antonello da Messina, a man who, I understand, is known among you [Venetians]. The taste of Colantonio was, according to the fashion of the time, entirely in favour of Flemish execution and colouring. He was so devoted to that kind of art, that he had thoughts of going to Flanders; but King René induced him to remain here, undertaking himself to show him the method and vehicle employed in the Flemish colouring." —"Da questo tempo [del Re Ladislao] non havemo havuto fino a Maestro Colantonio nostro Napolitano persona tanto disposta all' arte della pictura, che se non moriva iovene era par fare cose grandi. Costui non arrivò per colpa de' tempi alla perfettione del disegno delle cose antique, si come ci arrivò il suo discepolo Antonello da Messina, homo secondo intendo noto appresso Voi. La professione di Colantonio tutta era si come portava quel tempo in lavoro di Fiandra, e lo colorire di quel paese, al che era tanto dedito che haveva deliberato andarvi. Ma il Re Raniero lo ritenne qui con mostrarli ipso la pratica e la tempera di tal colorito," &c.

The early date of this letter gives it a more than common importance. The assumption that Antonello da Messina was a scholar of Colantonio del Fiore may be passed over, as at once unsupported and inconclusive. On the other hand, it is certain that Colantonio painted latterly in the Flemish taste ; his St. Jerome, now in the Museum at Naples, compared with earlier works attributed to him in S. Maria la Nuova and elsewhere, proves this. (See *Passavant, Kunst-Blatt*, 1843, No. 57.) But, Neapolitan writers excepted, none who have examined that work, have ventured to say that it is painted in oil. If it bears the date 1436, as Dominici (*Vite de' Pittori Napoletani*, vol. i. p. 105.) and Piacenza (*Baldinucci*, vol. v. p. 146.) assert, that circumstance, according to Summonzio's

statement, sufficiently accounts for its not being painted in oil, as King René's arrival in Naples was later by two years. But supposing that these writers were mistaken (as more recent authorities give no such date), or that later works of the same kind by Colantonio exist, painted while René occupied the throne of Naples, the doubtful appearance of such works may, perhaps, be explained by a reference to the pictures of the royal artist.

Several examples are preserved ; the latest and best is in the cathedral at Aix, and all are more or less in the style of the Van Eycks — a taste which René may have acquired during his three years' captivity at Dijon and Bracon, between the years 1431 and 1436.* Passavant (*Kunst-Blatt*, ib.), speaking of one of these examples, at Villeneuve, near Avignon, says that "it is painted in tempera, over which varnish colours are glazed." King René's chief practice was in illuminating, and it seems that his larger pictures are hatched with the point of the brush, in the manner of the early Italian tempera painters. The royal artist's mode of painting was thus an approach only to the improved system of the Van Eycks, and his partial adoption of their process is explained by his being unable to divest himself of the habits of miniature and missal painting.† The communication of such a method to Colantonio, already far advanced in years (according to the chronology of Dominici), was therefore hardly calculated to give an idea of the new process ; and the arrival of Van Eyck's picture, whether sent to René or Alphonso, might still have been the immediate cause of Antonello da Messina's visit to Flanders.

Summonzio's allusion to the estimation in which Antonello was held by the Venetians, establishes the truth of Vasari's statement in regard to that point, and there can be little doubt that the Sicilian was the first to communicate the Flemish

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* He was allowed to quit his imprisonment on parole, for the settlement of the affairs of his kingdom, between 1432 and 1434.

† See Œuvres complètes du Roi René, avec une biographie et des notices par M. le Comte de Quatrebarbes, et un grand nombre de dessins et ornements d'après les tableaux et manuscrits originaux par M. Hawke. 4 tomes. Angers, 1845–46.

method of oil painting in Italy. But it is not to be overlooked that some Flemish artists, scholars or followers of Van Eyck, were in Italy, and executed pictures there, about the middle of the fifteenth century. Among these were Roger of Bruges *, Memling, and Justus van Ghent. Facius speaks of the first as having seen and admired a work by Gentile da Fabriano, in Rome, during the year of the jubilee (1450; see Muratori, *Annali d'Italia*), and mentions several works by the Flemish artist in Genoa, Ferrara, and Naples. The portrait of Roger of Bruges, with the date 1462, and another picture by the same artist, were seen in Venice by the anonymous traveller whose notes were published by Morelli (*Notizie*, &c. p. 78. 81.); and Lanzi inclines to the opinion that the altar-piece in Venice, inscribed "sumus Ruggerii manus," was also painted by him during his stay in that city.

Memling's visit to Italy is rendered probable by the introduction of well-known Italian buildings in pictures executed by him after he was settled at Bruges. He appears to have accompanied his master, Roger of Bruges, on the occasion of the jubilee, when, as Muratori states, the concourse of people from all parts of Europe was so great, that the principal roads of Italy resembled fairs. Several works by Memling existed in Venice and Florence in the fifteenth century.

Justus van Ghent entered into a contract (dated 1465) to paint an altar-piece at Urbino (*Passavant, Rafael von Urbino*, vol. i. p. 429.) The picture is still preserved there. A fresco at Genoa, inscribed "Justus de Alemania pinxit, 1451," if by the same artist, would prove that he was in Italy as early as Roger

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* Those who have undertaken to correct Vasari and the early historians of art, for confounding (as they have supposed) Roger of Bruges and Roger van der Weyden, are to be corrected in their turn. The researches of M. Wauters (*Messager des Sciences historiques*, 1846, quoted by Michiels, *Histoire de la Peinture Flamande et Hollandaise*, vol. iii. p. 392.), have proved that Van der Weyden was the family name of Van Eyck's scholar. His son, Goswyn, was also a painter. This fact, and the circumstance of the father having called himself Roger of Bruges, may have led Van Mander and others to consider the latter a distinct person from Roger van der Weyden.

of Bruges. On the whole, therefore, it may be concluded that specimens of the Flemish method were not only imported to Italy, but were actually painted there, before the return of Antonello da Messina from Flanders. The inference is, that the Flemish artists who were thus employed contrived to keep the secret of their process. This may be the more readily believed, from the fact that although Justus van Ghent resided for some years at Urbino, and painted works in oil there, the native artists, such as Giovanni Santi (the father of Raphael), continued to paint in tempera, not having been favoured, as it would seem, by a communication of the method in which Justus wrought. Accordingly, Giovanni Santi, taking occasion to mention the distinguished painters of his day, including John Van Eyck and Roger of Bruges, in a poem which is still extant (*Passavant*, ib. vol. i. p. 444.), appears to resent the illiberality of Justus by omitting his name.

While noticing the introduction of Flemish works into the South of Europe, it may be remarked that in consequence of John Van Eyck's visit to Portugal, and the subsequent relations which subsisted between that country and Flanders, the influence of the Flemish style is very apparent in early works executed by Portuguese artists, which are still preserved in the Academy at Lisbon and elsewhere. This influence has been traced and exemplified by an enlightened amateur, in a series of letters, accompanied with documents (*Les Arts en Portugal, par le Comte A. Raczynski*, Paris, 1846). The author remarks that all pictures executed in Portugal till the middle of the sixteenth century (and in the instance of the pictures of Gran Vasco, even later) are painted in this style. "Assurément dans tous ces tableaux c'est l'influence allemande et flamande qui prédomine ; j'ose même dire qu'elle y règne presque exclusivement." (p. 146.) Together with this general style, there can be no doubt that the technical methods of the Flemish school were also adopted. The same may be observed of the Spanish schools, especially that of Seville, which, in the technical habits of its best period, was more allied to the Flemish than to the Italian practice.

CHAP. VIII.

EXAMINATION OF VASARI'S STATEMENTS RESPECTING THE INVENTION OF VAN EYCK.

In the preceding narrative Vasari prepares the reader for the excellence of oil painting, by dwelling on the inconveniences of tempera. He exaggerates the defects of that method, and the disgust of the artists who practised it. He omits to speak of those exceptional cases in which, as before remarked, a satisfactory union of tints was effected *; and he appears to forget that, after the novel method was

* Examples like those before adduced were less rare after the middle of the fifteenth century. The paintings of Filippo Lippi, at once finished and free, indicate the use of a medium which did not dry rapidly. This requisite in the tempera vehicle may have been secured, not merely by the immixture of honey, according to the early Anglo-German process, but by the combination of wax with glutinous ingredients as exemplified in Le Begue's receipt before quoted. Another mode, in which even the combination of oil with glutinous vehicles was tried by a Florentine artist, will be noticed in this chapter. As regards the addition of wax, there is no direct evidence that it was commonly employed at the period in question; but, at a time when various efforts were made to improve the practice of tempera, it is by no means improbable that the partial use of wax may have been revived.

introduced, the Italian artists, instead of eagerly adopting it, long remained faithful to their earlier habits. For it was not till the essential qualities of oil painting had been in part developed in Florence, Milan, and Venice, by Perugino, Leonardo da Vinci, and Giovanni Bellini, that the new art was generally followed.

Some circumstances connected with its introduction may have operated, in addition to the causes before noticed, to prejudice a certain class of the Florentine masters against it. It was represented in Italy, at first, by Flemish pictures. These, though not without influence (independently of the method in which they were executed), from their fascinating treatment of accessories, appear to have been more admired by Italian collectors than by Italian painters. The specimens of Van Eyck, Hugo van der Goes, Memling, and others, which the Florentines had seen *, may have appeared, in

* A St. Jerome, by Van Eyck, was in the possession of Lorenzo de' Medici, and may have been in Italy at an earlier period. (*Vasari, Introd.* c. 21.) The Bath, with numerous figures, was, in the time of Facius (1456), in the possession of Cardinal Ottaviano degl' Ottaviani: this appears to be the same picture which Vasari (ibid.) mentions as belonging, afterwards, to the Duke of Urbino. The specimens of Van Eyck, which were to be seen in Naples, Milan, and Venice, (see *Morelli, Notizie d'Opere di Disegno,* p. 14. 45. 116.) may have been known to many Tuscan painters. Hugo van der Goes had painted the altar-piece (a triptych) for the Portinari Chapel in S. Maria Nuova, at Florence. (*Vasari, Introd.* ibid.) The picture, now divided and not in its original place, is still in

the eyes of some severe judges (for example, those who daily studied the frescoes of Masaccio *), to indicate a certain connexion between oil painting and minuteness, if not always of size, yet of style. The method, by its very finish and the possible completeness of its gradations, must have seemed well calculated to exhibit numerous objects on a small scale. That this was really the impression produced, at a later period, on one who represented the highest style of design, has been lately proved by means of an interesting document in which the opinions of Michael Angelo on the character of Flemish pictures are recorded by a contemporary artist. †

that church. (*Passavant, Kunst-Blatt,* 1841, No. 5.) A work by this artist, executed at the same time, is now in the Pitti Palace. A picture by Memling was also in S. Maria Nuova; another belonged to the Medici. (*Vasari, Introd.* ib.) That Justus van Ghent, Roger of Bruges, and probably Memling, the scholar of the latter, were all in Italy, has been shown in the note appended to the last chapter. The influence of the style of the Flemish painters in Italy, at this time, is acknowledged by Rumohr (*Italienische Forschungen,* vol. ii. p. 263.). Ciriaco d' Ancona, in a fragment of a letter preserved in Colucci's *Antichità Picene,* tom. xv. p. 143. (compare *Lanzi,* vol. i. p. 276.), speaks of a Sienese painter, Angelo Parrasio, whom he had known at Ferrara in 1449, and who, he remarks, had imitated Van Eyck and Roger of Bruges in a picture executed at Ferrara.

* Vasari, Vita di Masaccio.

† Les Arts en Portugal, par le Comte A. Raczynski. Paris, 1846. This work, before noticed, opens with some extracts from a manuscript by " François de Hollande, architecte et

The Italian masters above named succeeded, however, in adapting oil painting to large dimensions, in many cases with corresponding breadth of manner; and their immediate followers carried its practice to perfection. Vasari, to whom exam-

enlumineur." The principal part, which appears to be a confused history of ancient and modern art, was completed at Lisbon in 1548. Francisco was most employed during the reign of John III. (1521—1557). The most interesting part of the MS., translated by the editor, consists of various conversations, apparently recorded as they occurred in Rome. The opinion of Michael Angelo on Flemish art was elicited by the Marchioness of Pescara, Vittoria Colonna, who observed that the Flemish pictures appeared to her to be treated with a more devout feeling than the works of the Italians. The great artist replies: "La peinture flamande plaira généralement à tout dévôt plus qu'aucune d'Italie.... En Flandre, on peint de préférence, pour tromper la vue exterieure, ou des objets qui vous charment ou des objets dont vous ne puissiez dire du mal, tels que des saints et prophètes. D'ordinaire ce sont des chiffons, des masures, des champs très verts ombragés d'arbres, des rivières et des ponts, ce que l'on appelle paysages, et beaucoup de figures par-ci par-là; quoique cela fasse bon effet à certains yeux, en vérité il n'y a là ni raison ni art, point de symétrie, point de proportions, nul soin dans le choix, nulle grandeur.... Si je dis tant de mal de la peinture flamande, ce n'est pas qu'elle soit entièrement mauvaise, mais elle veut rendre avec perfection tant de choses, dont une seule suffirait par son importance, qu'elle n'en fait aucune d'une manière satisfaisante.... La bonne peinture est noble et dévote par elle-même, car chez les sages rien n'élève plus l'âme et ne la porte davantage à la dévotion que la difficulté de la perfection," &c. A native of Holland might have had some reluctance in recording so severe a judgment on the style of the Netherlands, but Francisco de Ollanda was born in Lisbon; his father, Antonio, having settled there.

ples of that perfection were familiar, appears to have contrasted them, in imagination, with the most timid specimens of tempera.

The biographer next proceeds to speak of certain attempts made by Alesso Baldovinetti, and others, before oil painting was introduced (as he appears to assume), to unite richness and depth of effect with fresco, by employing unctuous ingredients in retouching frescoes, and perhaps for painting generally. In the life of Baldovinetti, he describes the vehicle employed by that artist more particularly. It consisted, he says, of "vernice liquida" and yolk of eggs: he adds that, where the colour so mixed was applied too thickly, it cracked and peeled off.

This defect accounts for his dwelling on the superior firmness and consistence of Van Eyck's pictures, the surface of which, he observes, was in no danger of being detached, even by sudden shocks. To painters of the present day, such accidents to newly painted pictures may appear almost impossible; yet the use of heterogeneous vehicles may, without due care, lead to such results. Northcote, in his life of Reynolds, relates that a newly finished picture by Sir Joshua, having been accidentally overturned, was found on examination to have shaken off "a considerable part of the face and neck."* So, when Vasari states that Van Eyck's pictures would bear washing, he probably referred,

* Vol. ii. p. 160.

not to tempera, which, when varnished, was proof against wet, but to such pictures as those of Baldovinetti, the surface of which, if cracked, would admit the moisture, and might then be easily detached.

From the manner in which Vasari speaks of the (supposed) invention of Baldovinetti, it is evident that he considered his countryman as one who was foremost in endeavouring to remedy the defects of tempera. A reference to the date of this Florentine painter (of which the biographer appears to have been ignorant) will, therefore, not be unimportant. He was born about 1425*, and died near the close of the century. The period when he began to practice his method was therefore, in all probability, scarcely anterior even to the introduction of oil painting into Florence. Moreover, the composition which Baldovinetti employed, far from being an invention of his, was used in Venice in the peculiar glass-painting already described, before he was born. This is apparent from the following passage in the oldest portion of the Venetian MS.: "Take yolks of eggs and 'vernice liquida,' equal quantities, incorporate them well, and apply the mixture, as a coating, with the brush. It is

* See the documents quoted by Gaye, Carteggio ined. d'Artisti, vol. i. p. 224. Compare the notes to Baldinucci (Milan, 1811), vol. v. p. 317.; and the notes to the last Florence edition of Vasari (1832—1838), Vita di A. Baldovinetti.

proof against water and every thing else."* Thus used, the ingredients may have been less liable to crack than when mixed with solid colour. But, without staying to examine further the claims of Alesso Baldovinetti, we proceed to a more important question, viz. the nature of "vernice liquida."

Vasari uses the term as an ordinary and familiar one, in his account of the invention of oil painting and in the life of Baldovinetti. The expression frequently occurs in the Venetian MS., in the MSS. of Alcherius, in the compendium of St. Audemar, and in the notes of Le Begue, and is to be met with in all early treatises on painting. Cennini mentions "vernice liquida" no less than nine times†, and speaks of no other varnish. On one or two other occasions, where the epithet "liquida" is omitted, apparently to avoid repetition, it is still clear that the same composition is meant. The process of varnishing, as already shown, generally took place in the sun; the sun's heat was, at all events, afterwards necessary to dry the surface. Cennini

* "Toy torli de ove e v̄nixe liquida egualmente ē īcorpora molto bñ īsieme ē de questa tale cola darai ꝑ copta como el penelo la qual colla nō teme aqua ne cossa che sia." The yolk of egg contains a small proportion of oil, but not enough to arrest the drying of the substance; to increase the oily ingredient was therefore an obvious remedy. The method of Baldovinetti was not perhaps the only attempt to combine oily and glutinous materials, so as to render tempera more manageable; for this, according to Vasari, was the great object.

† Trattato, c. 101—161.

intimates that the practice was not without risk (as panels are apt to warp and split in the sun), but recommends boiling the varnish well when it was intended that the picture should dry in the shade.*

Tambroni, the editor of Cennini, observes, with reference to a passage in the chapter here quoted, that "the silence of Cennini as to the nature of this varnish is truly to be deplored." The commentator estimated the importance of the desired knowledge justly; at the same time it is surprising that he should have made no attempt to clear up this difficulty, or to satisfy himself and others on the point in question. It is plain from Cennini's account (and it will be proved from other sources) that this was the universal varnish for tempera pictures. Van Eyck, in consequence of the splitting of a panel in the sun, proceeded, first, to prepare his varnish so that it might dry in the shade; and, secondly (which was his chief improvement), to mix the colours partly with this drying medium. Tambroni may therefore have supposed, and not without reason, that a description of the varnish, even with its original defects, which was commonly used by the early tempera painters, might throw some light on the Flemish improvement in oil painting.

* "Se volessi che la vernice asciugasse senza sole, cuocila bene in prima; chè la tavola l'ha molto per bene a non essere troppo sforzata dal sole." — Ib. c. 155.

It will be remarked that there is a close coincidence between Cennini's observation respecting the inconvenience of exposing panels in the sun, and the accident which, according to the narrative, actually occurred to Van Eyck. There is a further coincidence between Cennini's recommendation that the varnish should be well boiled if the picture was *not* to be dried in the sun, and the corresponding precaution actually taken by Van Eyck. But this need not suggest the inference, either that Cennini had heard the story afterwards told by Vasari, or that Vasari had contrived his narrative to suit the directions of Cennini. Any writer might have stated that panels warp in the sun; and any painter, at a time when all were acquainted with mechanical processes, might have known that varnishes long boiled become more drying, though at the same time they become darker in colour. But that which was the chief novelty, the immixture of the colours with such a medium (more carefully prepared), is not noticed by Cennini with reference to painting *, and, which is remarkable, the method was already almost obsolete in Italy in Vasari's time; so that the biographer extolled an invention which he and most of his countrymen no longer sanctioned by their practice. This is the strongest proof that Vasari's account was derived from Flem-

* The mixture of "vernice liquida" with colours (for some purposes) was not unknown to Cennini. (*Trattato*, c. 161.)

ish authorities, and, therefore, likely to be, in the main, correct.

The silence of Cennini respecting the customary varnish need not have been "deplored" by Tambroni. The composition is fully described by many other writers. Two passages, where Cennini mentions "vernice liquida," employed as a varnish, are first to be examined. Speaking of a mordant, he says: "It would not be proof against wet or moisture in churches, where [though] the walls might be faced with brick; but it is fit for the surface of wood or iron, or any substance intended to be varnished with "vernice liquida."* In c. 145., the chapter to which Tambroni's note is appended, Cennini says: "Take then your 'vernice liquida' as clear and as light in colour as you can procure it."† In this case, the adjective "liquida," without a comparison with other passages in the book, and particularly the last quoted, might be taken for an ordinary epithet like the "clear" and "light" which accompany it, especially as there are two conjunctions.‡ The punctuation, supplied, as it ap-

* "Questo tal mordente non si difenderebbe nè da acqua nè da umido mai in chiese, dove fusse coperti in mura di mattoni; ma la sua natura è in tavola e in ferro, o dove fusse cosa avessi a vernicare con vernice liquida."—Ib. c. 153.

† "Adunque togli la tua vernice liquida e lucida, e chiara la più che possi trovare."

‡ This Latinism is quite consistent with the genius of the Italian language, and, if the comma were placed after liquida, would give emphasis.

pears, by Tambroni, shows that he thus understood it. The passage would then read: "Take then your 'vernice' as liquid, clear, and light in colour as you can procure it." Cennini, however, proceeds to direct that the varnish should be applied with the hand or with a sponge, thus showing that the composition was thick in consistence. To say that it should be used in as liquid a state as it could be procured would therefore be a contradiction, as it might be of any degree of fluidity. But the ambiguity which Tambroni's punctuation occasions is entirely removed by a reference to the two MSS. of Cennini preserved in the Laurentian and Riccardian libraries in Florence. In the Laurentian MS. the passage is: "Adonch̄ togli latua vernicie liquida bella, e chiara la piuch̄ possi trovare." In the Riccardian MS.: . . . "latua vernicie liquida. ꝛ lucida ecchiara," &c. In both these examples, and especially in the last, the words "vernice liquida" cannot be separated.

It is therefore apparent that the expression "vernice liquida," in the passage referred to, is the ordinary term used by early writers, to designate the varnish for tempera pictures. It remains to inquire what was the nature of the composition so called. In order to answer this question clearly, and to avoid future digression, it will first be necessary to consider the subject with reference to a remoter period. The evidence respecting the nature of the more ancient varnishes is partly philological;

but the history of terms is, in this case, closely connected with that of technical processes, and, from the light which it affords, is here indispensable.

Eustathius, a writer of the twelfth century, in his commentary on Homer, states that the Greeks of his day called amber (ἤλεκτρον) Veronice (βερονίκη).* Salmasius, quoting from a Greek medical MS. of the same period, writes it Verenice (βερενίκη).† In the Lucca MS. (8th century) the word Veronica more than once occurs among the ingredients of varnishes, and it is remarkable that in the copies of the same recipes in the *Mappæ Clavicula* (12th century) the word is spelt, in the genitive, Verenicis and Vernicis. This is probably the earliest instance of the use of the Latinised word nearly in its modern form; the original nominative vernice being afterwards changed to vernix.

Veronice or Verenice, as a designation for amber, must have been common at an earlier period than the date of the Lucca MS., since it there occurs as a term in ordinary use. It is scarcely necessary to remark that the letter β was sounded v by the medieval Greeks, as it is by their present descendants. Even during the classic ages of Greece β represented φ in certain dialects. The name Berenice or Beronice, borne by more than one daughter of the Ptolemies, would be more cor-

* ἡ δὲ τῶν ἰδιωτῶν γλῶσσα βερονίκην λέγει τὸ ἤλεκτρον. (*Od.* δ.)

† Salmasius, Exercitationes de Homonymis Hyles Iatricæ, Traj. ad Rhen. 1689, c. 101.

rectly written Pherenice or Pheronice. * The literal coincidence of this name and its modifications with the Vernice of the middle ages, might almost warrant the supposition that amber, which by the best ancient authorities was considered a mineral †, may, at an early period, have been distinguished by the name of a constellation, the constellation of Berenice's (golden) hair. ‡ The comparison of golden tresses with amber was not uncommon with the ancients: Nero, who sometimes affected to be a poet, applied the epithet "succineus" to the hair of his empress Poppœa; in consequence of which, observes Pliny, amber-coloured hair became fashionable. § The emperor had been anticipated by Ovid ‖, perhaps by others.

* Literally "bringing victory;" the same materials formed the name Nicephorus. The alteration of ϕ to β was usual in the Macedonian dialect and its varieties, according to which Philippus was written Bilippus, &c.

† Theophrastus de Lapidibus, § 63.: compare the notes in Hill's translation.

‡ "Devotæ flavi verticis exuviæ."

Catull. Coma Berenices, lin. 62.

The poem of Catullus is supposed to be a version of that of Callimachus, now lost, on the same subject. Foscolo, in the notes to his Italian translation (Milan, 1803, p. 119.), observes: "Dirò qui della testa bionda di Berenice; in Egitto dovea essere per la sua rarità di maggior merito che in ogni altro paese." Berenice II., the princess thus celebrated by the astronomer Conon, and by the contemporary poet Callimachus, died about 216, or according to others, 221, B. C.

§ L. xxxvii. c. 12.

‖ "Electro similes faciunt auroque capillos."

Metam. lib. xv. lin. 316.

Whatever may have suggested the application of the name Bernice to amber, it is clear from the authorities quoted, that the word was so appropriated long before the revival of painting in Italy. At the same time, it does not appear that either the physicians or the painters of the middle ages had very accurate notions respecting the substance. The Oriental names, some of which were adopted into the ancient and modern languages of the West, indicate this ambiguity; while the ancient descriptions of the nature and origin of amber would often serve as well for very different substances. The materials with which it was confounded, and which gradually either served as substitutes for it or entirely superseded it, will require to be specially considered.

First, with regard to sandarac: this resin flows from the Thuja articulata (African arbor vitæ), a dwarf tree somewhat resembling the juniper, which abounds in Barbary on the sides of Mount Atlas *, and is also found in various parts of the East. The fluctuating significations of the word sandarac show how generally this resin was confounded with amber, which it resembles in appearance. In the best Persian lexicon (the *Borhâni Kâti*) "sandar" or "sandarah," is explained as "the name of a certain yellow gum resembling amber." † In Shak-

* Dictionnaire des Sciences naturelles, Paris, 1816–29, art. Thuya. Miller's Gardener's and Botanist's Dictionary, 1807, art. Thuja.

† For these and other references of the kind the author is ndebted to an eminent Oriental scholar.

spear's Hindoostanee dictionary, "sandaros" (Arabic and Persian) is "a resin supposed to be produced by the Juniperus communis, but now proved to exude from a species of Thuja." In the Bengali dictionary, amber is rendered by the word "chandarus." In the *Borhâni Kâti* again, "sandarus, the same as sandar," is said to be distinguished from amber by its smell when burnt. The smell is offensive; yet, from the outward resemblance of the resin to frankincense ("thus"), the tree which bears it has the name "thuia." The term "thyeum" applied by an ancient authority to amber, and the mention of Numidia as the country where amber was found*, point, in like manner, to sandarac. Salmasius, in the treatise before quoted, remarks that the Arabian writers frequently confounded sandarac and amber, and instances Avicenna, who employs almost the same words to describe the qualities of both. For the rest, the Arabic word "ambar," whence our own is derived, appears to have been originally appropriated to ambergris †. The Arabic and Persian term for the real substance is "Karabe."

Next, as regards copal: in Shakspear's dictionary before quoted, copal is rendered "chandaras—a corruption from the Sanskrit." The Sanskrit compound "chanda-rasa" (literally moon-juice)‡,

* Pliny, l. xxxvii. c. 11.

† "Leo Africanus balænam *hambara* dici scribit ab incolis Marochi et Fez."— *Salmasius, Exercit.* ib.

‡ Conrad Gessner de Rerum fossilium, &c. (p. 50.) observes:

compared with the Bengali word already given, may thus represent either copal or amber, while the mere sound still connects it with sandarac. The researches of a late French writer on varnishes tend to prove that the South-African copal is the finest in quality, and that the best samples, which sometimes reach Europe from India, are originally procured from Africa. * If he is correct, nothing is American, in the choicer specimens of this resin, but the name.

The difference between amber and Oriental (or African) copal, in the ancient receipts, is thus scarcely to be traced; and as both substances, employed in varnishes, have the same recommendations and nearly the same defects, the distinction is of little importance. Local facilities in obtaining one or the other may, however, be worthy of consideration. Thus, amber was always considered the *German* varnish; and, on the other hand, when the Byzantines refer to amber under its Oriental names, they may sometimes mean copal. There is a more palpable difference between sandarac and the other two substances; yet sandarac was, at an early period,

" Succinum quod Græci Electrum vocitant affinitatem quandam habere cum luna putant aliqui." He mentions the affinity, at least in name, of the " lac lunare " or " mondmilch," a species of agate found in the Alps.

* Tripier-Deveaux, Traité théorique et pratique sur l'Art de faire les Vernis, Paris, 1845, p. 40. See also Guibourt (Histoire abregée des Drogues simples, Paris, 1836, vol. ii. p. 526.) on the copal of Madagascar.

commonly substituted for amber. This practice throws considerable light on the ancient receipts for the preparation of varnishes. Those receipts often appear in two forms, and it will be shown that, in general, the one relates to sandarac, the other to amber (or copal); the first being an ordinary, the second a superior, varnish.

The test of amber — its attractive power after friction — to judge from some of its names, was as familiar to the ancients as to the moderns. Those names have a remarkable coincidence in meaning. The old Greek designation, Ἤλεκτρον, is supposed to be derived from ἕλκω, traho*, as amber draws or attracts small light objects, such as straws, &c. Pliny observes that it was called "Harpaga" (ἁρπάζω, rapio) for the same reason.† In some compound Sanskrit terms for amber the word straw is introduced, and is first in order, as "Trina-grahin," straw-seizing; "Trina-mani," straw-gem. The Persian equivalent "Kāh-rubā," straw-stealing, is the source of our Karabe. Buttman states that the word Rav or Raf, to seize, is appropriated to this substance in the North of Germany.‡ It remains to observe that the term Sandaracha, with the Greeks and Romans, meant

* Buttman, Mythologus, vol. ii. p. 362.

† . . . "et vocare harpaga, quia folia et paleas, vestiumque fimbrias rapiat."—L. xxxvii. c. 11. The term "tire-paille" is a familiar French synonyme of amber.

‡ Mythologus, ib.

a red pigment (in Dioscorides, red orpiment). In the Persian dictionary before mentioned we read "this word (sandarūs) also denotes a red colour, probably from the resemblance of red to its own hue;" that is, the colour of the resin, which deepens with age. In the Westminster accounts (13th and 14th centuries) the "vernisium rubeum," so often mentioned, is unquestionably sandarac. The early medical writers distinguish the resin from the pigment by calling the former the sandarac of the Arabs, meaning the Arabian physicians.

The greater facility of dissolving sandarac in oil, and above all its cheapness as compared with amber, rendered it fitter for ordinary use. It became, perhaps even with the ancients, the common representative of the more costly substance; in the middle ages the word "vernix" was applied to both, and, by degrees, to sandarac alone. In this stage of the philological inquiry the more modern dictionaries afford full information. They refer to times when the original application was lost, and when "vernix" was the equivalent for sandarac. Pasini's Italian and Latin dictionary translates vernix, sandaracha, with the common, but absurd, derivation "quod *verno* tempore fluat." Littleton's dictionary has the same meaning and derivation. The Della Crusca gives "sandaracha" as the Latin equivalent of "vernice," and "sandaracha illinere" for "vernicare." The word

Verenice (βερενίκη), to use the words of Salmasius, degenerated to vernix, which was again applied to another substance; it was appropriated to the resin of the juniper (read Thuja), on account of the resemblance of that resin to amber.*

Accordingly, in the early Italian and other recipes for varnishes, the word "vernice" is a common synonyme for sandarac resin. Before this is understood, it is somewhat perplexing to find "vernice" among the ingredients for making a varnish. When Walpole triumphantly adduced the mandate of Henry III. respecting oil and varnish, it was not likely to occur to him that the word "vernix" meant a resin only; and that when dissolved in the oil, and not before, it formed a varnish in the modern sense of the word. It has been already shown that whenever the word "vernix" (sometimes written "vernisium" and "verniz") occurs in the English accounts, the quantity is given in weight, showing that it was a dry substance; the oil, in the same accounts, being always noted by measure.

When the "vernix" or dry sandarac was dissolved by heat in linseed oil, it was consistently called liquid vernix, and, by the Italians, "vernice liquida." As this brings us to Cennini, to

* "Ex quo βερενίκης vocabulo iidem barbari *vernicem* suum depravarunt, quod et pro alio genere gummi usurparunt; ita enim vocarunt gummi Juniperi ob similitudinem quam habet cum succino." — *Exercitat.* &c. c. 101.

the varnish of the tempera painters, and to Van Eyck, the statement will require to be confirmed by satisfactory evidence. Authorities are numerous, and a selection only can be made from them; it is to be remembered that the early writers put the juniper for the Thuja articulata.

Cardanus: "The juice which flows from the juniper is called vernix.—From dry vernix and linseed oil, liquid vernix is made: this is calculated to resist all effects of the atmosphere, and therefore is applied to pictures."*

Matthioli: "The juniper produces a resin similar to mastic, called (though improperly) sandarac.—This, when fresh, is light in colour and transparent, but, as it acquires age, it becomes red.—With this resin and linseed oil is prepared the liquid vernix which is used for giving lustre to pictures, and for varnishing iron. The dry vernix, that is, the resin of the juniper . . ." † then follow the medical uses.

* "Juniperi lachryma vernix vocatur.—E sicca vernice et lini oleo fit liquida vernix, ad omnes cœli impetus coercendos aptissima: unde picturis addi solet."—*Hieron. Cardani de Subtilitate*, &c. Basileæ, 1554, lib. viii.

† "Produce il ginepro la gomma simile al mastice e chiamasi questa gomma (ancora che male) sandaraca.—Questa, quando è fresca, è lucida bianca e trasparente, ma invecchiandosi rosseggia.—Fassi di questa e d'olio di seme di lino artificialmente la vernice liquida che s'adopera per far lustre le pitture e per inverniciare il ferro. La secca, cio è la gomma del ginepro conferisce," &c.—*Il Dioscoride dell' eccellente Dottor medico M. P. Andrea Matthioli*, Mantova, 1549, lib. i. c. 84.

Caneparius: "It is prepared from the sandarac of the Arabs (as the juniper resin is termed in laboratories); this is called dry vernix. From this and linseed oil is made the dark liquid vernix, so well adapted for giving lustre to pictures and statues; it even adds splendour to iron and preserves it from rust." Elsewhere: "The sandarac of the Arabs is, then, a juice flowing from the juniper which hardens to a resin. This, while fresh, is white and transparent; but, as it acquires age, it inclines to a red colour." *

Schröder: "Juniper: its resin is the sandarac of the Arabs; dry vernix. Liquid vernix is an artificial preparation composed of this sandarac resin dissolved in linseed oil. The sandarac of the Greeks is orpiment.†

Castello: "Vernisium, the same as vernix;

* "Componitur ex sandaracha Arabum, hæc est gummi juniperi officinis recepta voce, vernix dicitur arida, ex hac igitur, et oleo lini fit vernix liquida atra, quæ tantum præstat ad tabulas depictas illustrandas, atque imagines, cum etiam ferro nitorem inducat et a rubigine ipsum tueatur."

"Sandaracha Arabum igitur est lachryma emanans a junipero, et in gummi concrescit, quod dum recens est album, lucidum, atque transparens, cum veterascit autem ad rufum colorem inclinat." — *Petri Mariæ Caneparii de Atramentis,* Ven. 1619, Quinta Descript. c. 26.

† "Juniperus: gummi (Arab. sandaracha, vernix) truckener firniss. Vernix liquidus factitius est liquor ex gummi hoc i. e. Sandaracha in oleo lini soluta. Sandaracha Græcorum est auripigmentum." — *Pharmacopœia Medico-chymica,* &c., *auct. Joanne Schrödero,* Ulm. Suev. 1685, lib. iv. c. 179.

otherwise called sandarac or juniper resin, and thus dry vernix; also the fluid composition prepared from this resin, then called liquid vernix." *

The term "vernice" alone is frequently used by early Italian writers for "vernice liquida:" the context then shows that the dry resin is not intended. But whenever "gomma di vernice" occurs, it distinctly means dry sandarac resin. The application of the word "vernice" to varnishes generally was more gradual; indeed, it is necessary to bear in mind that, in most early treatises on painting, the wider application was figurative, the strict meaning being sometimes resumed. After the sixteenth century the general meaning connected with the word varnish prevailed, while the restricted application of the term, as a synonyme of sandarac, by degrees became obsolete. For the present it is essential to preserve the associations of an earlier period, and we proceed to consider the double receipts before noticed, relating to sandarac and amber.

In the *Secreti* of Timotheo Rossello the following examples occur: they are not quoted as the most perfect modes of preparing the varnishes, but as descriptions which throw light on obscurer formulæ of the kind.

* "Vernisium, idem quod vernix, Sandaracha alias vocatur, vel gummi Juniperinum et ita vernix siccus; vel liquor ex hoc gummi paratus estque vernix humidus." — *Bartholomæi Castelli Lexicon Medicum*, &c. Genevæ, 1746.

"To make Vernice liquida.—Take one lb. of sandarac resin and four lb. of linseed oil: place [the latter] on the fire to boil: take another vessel [for the resin], adding three oz. of oil, little by little: stir continually with a spatula, and let the oil continue to boil till the whole is transferred to [the vessel containing] the varnish *: keep up a good fire for the said varnish: and, in order to know when the mixture has boiled enough, place a little on a knife, and if it remain thick, and somewhat firm, the varnish is made. Then instantly remove it from the fire and strain through a wet cloth." †

"To make a superior Vernice liquida.—Take three lb. of linseed oil, one lb. of yellow amber, and six oz. of pulverised brick.‡ Make a furnace with two orifices below, each orifice having bellows adapted to it. The fire, which should be of charcoal, requires to be great. Let there be an opening above:

* This passage in the original is not very clear; but another receipt (p. 251.), from the Venetian MS., explains it.

† "A far Vernice liquida — Piglia lib. i. de goma de vernice, e lib. iiii. d' oglio de linosa, e poni al fuoco e fa bollire, e piglia un altro vaso e poni oz. iii. d' oglio a poco a poco, e sempre mescola con una spatula, e sempre farai bollire l' oglio insino che sarà tutto in vernice, e sempre farai fuoco bono alla detta vernice, e se vorrai sapere quando sarà cotta metti della detta vernice un poco sopra un cortello, e se rimanerà viscosa e un poco dura sarà cotta e subito leva detta vernice dal fuoco e cola in un canevaccio bagnato in acqua."—*Della Summa de' Secreti universali, &c. di Don Timotheo Rossello,* in Venetia, 1575, v. ii. p. 127.

‡ The pulverised brick was used merely to assist the clarification of the varnish.

in this fit a glazed vessel which is to be luted to the opening so that the fire may not penetrate; for if it were to do so, the ingredients would presently be in a flame. Place your amber in the vessel with as much of the oil as will cover it: then blow with the bellows and make a great fire till the amber dissolves. As there is great danger of fire, have a wooden trencher ready, wrapped round with a wet cloth, and, if the varnish should catch fire, cover the vessel with the trencher. Meanwhile, boil, in another vessel, the remainder of the oil, making a moderate fire with charcoal, but still taking care that the flame does not ascend. Let this oil continue to boil till it be reduced one third. Then, when the amber is dissolved in the small quantity of oil first mixed with it, as above described, throw in the remaining oil which you have heated to ebullition, and mix together for the space of two misereres [about five minutes], so as to incorporate all well. Then remove the vessel from the fire, and throw in the pulverised brick above mentioned. Stir again a little; then cover the vessel; let the contents settle, and the varnish is made." *

* "A far Vernice liquida e gentile. — Piglia libre iii. d' oglio de linosa e lib. i. de ambro giallo, e oz. sei de polvere de quadrello; poi fa un fornelletto che habbia due bocche e ogni bocca habbia il suo mantesetto che soppia come apparerà disotto ed il fuoco sia de carboni e vole essere gran fuoco ed habbia un pertuso dove stia la pignatta che sia vitriata et ben turrata circa il buso del fornello acciò il fuoco non venghi a la pignatta

These receipts present, in juxta-position, the ordinary representative "Vernix," and the original Greek "Berenice." They appear together elsewhere. In the Byzantine MS. "santaloze" and "sandarac" (the latter being stated "not to be the best") point to this difference. In the treatise of St. Audemar "vernix" in one receipt is opposed to "glassa" in a second.* In the Montpelier MS. the distinction is remarkable: the resinous substance in the first recipe is called "fernix vel grassa;" in the second, "glassa vel fernix gna [Germana]." Grasa or grassa is the Spanish term for sandarac. Thus Pacheco, in his receipt for the ordinary

imperò che arde volontiera e metti il tuo ambro nella detta pignatta e l'una parte dell' oglio predetto e tanto solo che sia a pena coperto e così con quelli mantesi soffia e fali gran fuoco insino che l'ambro si disfa, e perchè è gran pericolo di fuoco habbi apparecchiato un tagliero el quale sia coperto di panno bagnato e quando vi saltasse il fuoco coprilo con quello tagliero. Ma prima cocerai l'oglio che ti avanza in una pignatta su quel medemo modo e falli lento fuoco de carboni, e guarda nō vada di sopra, e fa che scemi quasi il terzo, e questo serba, e come ho detto disfatto che sia l'ambro con quel poco d' oglio prima gettali dentro quest' altro oglio che hai fatto bollire, e mescola sempre per spatio di dui miserere per ben incorporarlo, dipoi piglialo levandolo dal fuoco e gettali dentro la polvere sopradetta del quadrello, e mescola bene alquanto, dipoi coprilo e lascialo alquanto riposare e sarà fatto."—Ib.

* "Oleum de lini semine et picem [pece Greca] uno pondere mixt. et eamdem mensuram de vernix pone in ollam et fac bullire bene," &c.

"Oleum lineum . . . mitte in ollam novam ac fac bullire super carbones vel claro igne paulatim, deinde munda glassam tuam quantum volueris, et pone in alteram ollam. et aluminis quasi mediam partem," &c.

varnish, says: "Add four oz. of pulverised grassa, which is the juniper resin, called by the Arabs sandarac."* Glessum (glas), according to Tacitus† and Pliny‡, was the ancient German name for amber. It is by no means improbable, from the fluctuating forms of words meaning similar things, that "grassa" may have been a corruption from it§: but there can be no doubt that the two recipes in the Montpelier MS. refer to the same materials as the more accurate descriptions of Rossello. The often commented two directions of Theophilus are to be explained in the same manner; for if they were intended to be identical in meaning, as is commonly assumed, the name of the vernix need not have been varied. The first of the two receipts in Theophilus clearly relates to sandarac. In the second, the word "glassa" occurs‖; and, as in Rossello, there are preparations for a greater fire, and more effectual precautions are taken to prevent accidents: the oil is heated sepa-

* "Echale quatro onzas de grassa molida en polvo (que es la goma del enebro que los Arabes llaman Sandaraca)," &c.—*Arte de Pintura su Antiguedad y Grandezas, por Fr. Pancheco*, Sevilla, 1649, p. 410.

† De Moribus Germanorum, c. xlv.

‡ L. xxxvii. c. 11.

§ In the Strassburg MS. common "glas" is synonymous with sandarac. "Zu dem ersten nim des gemeinen virnis glas ein phunt." "In the first place take of common vernix glas one pound." The inference is, that the superior kind of "glas," used as a varnish, was amber.

‖ Theophili Divers. Art. Schedula, l. i. c. 21.

rately; the consistence of the varnish is tried, and the vessel is covered when the operation is completed; all circumstances, no matter whether in themselves important or not, which correspond with the clearer directions of the Italian. That Theophilus should appear to identify "glassa" with the "gummi fornis" (fürniss) before mentioned by him, is to be explained by his employing the term in its general sense, and as the equivalent of "varnish." The example of Rossello is, in this point also, quite parallel, as he still calls his amber varnish "vernice liquida," adding only the epithet "gentile." The direction of Theophilus, not to suffer the varnish to boil, is incorrect, even as regards the sandarac, and is therefore of no weight. His recipe is otherwise objectionable; for, as Merimée observes, two parts of oil to one of resin would make much too thick a varnish for ordinary purposes.* It will be observed that Rossello's proportions, though still calculated to make a very thick composition, are better.

That the words "glassa" and "vernix" meant two distinct substances, is further apparent from the mode in which those words are used in the Paris copy of the manuscript of Eraclius. After speaking of linseed oil and other ingredients, the writer says: "Add vernix to them, and heat the composition on a charcoal fire; but if you have no

* De la Peinture à l'Huile, Paris, 1830, p. 75.

vernix, take glassa," &c.* In the Strassburg MS. the term "(common) glas" is applied to sandarac; and, in the instance now quoted, it would appear that the two significations are interchanged, "glassa" meaning the common substance, and "vernix" (as originally) amber: Le Begue also uses "glasse" for sandarac. The clue to this labyrinth is easily supplied: *glessum* and *berenice* were the Latin and Greek terms appropriated at an early period to amber. The word berenice (vernix), even before the thirteenth century, became the usual designation for sandarac; and the word glessum (glas) was sometimes, though rarely, also used to denote that substance. Where both terms appear together, they mean distinct things; and the context can alone show which of the two meanings each conveys; but in general *glas* means amber, and *vernix* sandarac.

The formulæ of Rossello, the terms of which are not to be mistaken, may be considered good representatives of the earliest modes of preparing sandarac and amber varnishes; and, whether of Byzantine or of German origin, they were probably derived, mediately or immediately, from the same ancient source whence Theophilus, the author of the Montpelier MS., and others had drawn their information.

It does not appear that the amber varnish was

* "Vernix cum eis pones et super carbones calefacies; si autem vernix non habueris accipies glassam," &c.

used at an early period in England. The two resins mentioned in the Westminster accounts are sandarac and mastic, or red and white varnish. The two resins mentioned in a receipt for an oil varnish in the *Mappæ Clavicula*, headed "Collam Græcam facere," are sandarac and mastic. There is some ground for supposing that this MS. is of English origin: the circumstance of the English names of plants (whence colours were manufactured) being given, favours this view. The three materials for varnishes mentioned in the Strassburg MS. (the probable connexion of which with English practice has already been considered) are sandarac, mastic, and turpentine resin; the latter was sometimes called "glorie," from the gloss which it produced.* As this turpentine (in a concrete state) was also called white resin in later times †, it is not impossible that the term "vernisium album" in the English records may have comprehended it. From those accounts it appears that, in the 13th century, the red varnish (sandarac) was 3*d.* and 4*d.* the lb.; the white 10*d.* the lb. ‡; the

* It is so named in Boltzen's Illuminir-Buch and in the Mayerne MS. In the Strassburg MS. it is called "gloriat."

† See Dreme, Der Firniss- u. Kittmacher, oder Anleitung zu vortheilhafter Bereitung der besten Lack- u. Oel-Firnisse, ec. Brünn, 1821. The white resin was also called "encens blanc." — *Pomet, Histoire Générale des Drogues,* Paris, 1735, t. ii. p. 65.

‡ "Item in v. lb. rubei vernicii xv. d. In quinque libris de wernys xv. d. In ii. li. vernisii rubei vii. d. In i. lb. rubei

latter was no doubt mastic. In 1353 the red varnish was 4*d.* the lb.; at this time, Lonyn of Bruges provided 6 lb. of white varnish, at 9*d.* the lb.; while another dealer in such materials furnished 136 lb. of white varnish at 4½*d.* the lb.* The altered price in the latter case might be accounted for by the large quantity sold; but if, as appears more probable, the substance was different, it may have been concrete turpentine. The partiality of the Northern artists for a glossy surface would sufficiently explain its abundant use. Mastic and "the oyle of a firre tree" are also mentioned together in the *Proper Treatise* before quoted, in which some early English methods are to be traced.†

This concrete turpentine was sometimes added to assist the liquefaction of the sandarac; thus prepared, the varnish, besides being glossy, was less dark in colour, being exposed for a shorter

vernicii IIII. d. In una li. vernisii albi X. d. In I. quarterone albi vernisii II. d. ob." (1294).

* "Johanni Lightgrave pro CXXXVI. lb. albi verniz similiter emptis pro pictura ejusdem capelle precium lb. IIII. d. ob. LI. s. Eidem pro XVIII. lb. de verniz rubeo precium lb. IIII. d. VI. s. Lonyn de Bruges pro VI. lb. di. de verniz blank emptis pro pictura dicte capelle precium lb. IX. d. IIII. s."

† An English manuscript in the British Museum (Sloane MSS. 2584.), apparently written in the first half of the fourteenth century, contains the following receipt. "Take of ībentyne I. lb., of gume arabyk [here, as in Theophilus, c. 21., put for sandarac] I. lb., of frankensense I. lb., and melte hē togeders and put þerto oyle of lynsed also mochel as it nedes," &c.

time to the action of the fire. Accordingly, some receipts for "vernice liquida" include this ingredient, called "pece Greca" and "pegola." The slowness in drying of the unctuous semi-liquid turpentine in its natural state, rendered a previous treatment necessary to fit it for immixture with varnishes. The old mode of preparing the substance, with this view, is given in the Byzantine MS. as follows. "Take fir resin in the quantity required; place it in a copper vessel (which it should only half fill), and set it on the fire. Take care that it does not run over; if you see it rise, remove it from the fire, and blow on it with a reed, or place the vessel in another that is full of cold water; this instantly stops the tumefaction. Replace it on the fire, and repeat the operation several times, till the resin ceases to swell. Thus pegola is prepared. Remove it from the fire, and pour it into a copper vessel full of water, ready for the purpose. Afterwards gather up the pegola and preserve it." *

* "Comment il faut faire la Pégoula.—Prenez de la résine de sapin, autant d'ocques que vous voudrez; mettez-la dans un vase de cuivre d'une capacité double du poids de la résine, et placez-la sur le feu pour la faire cuire. Ayez soin de l'empêcher de déborder; si vous la voyez monter, retirez-la du feu et soufflez dessus avec un chalumeau, ou placez la chaudière dans un autre vase rempli d'eau froide, ce qui arrête sur-le-champ le débordement. Remettez-la ensuite sur le feu, et recommencez ainsi à plusieurs reprises, jusqu'à ce que la résine cesse de déborder. C'est ainsi que se prépare la pégoula. Retirez-la du feu et versez-la dans un vase de cuivre plein d'eau, que vous aurez préparé

The most effectual contrivances were no doubt gradually employed to reduce this ingredient to the fit state for mixing with varnishes; the following process, though modern, may be added as one of the best examples of the kind: —

"Place the resin in a glazed vessel which it should only half fill; add a perfectly pure and filtered solution of potass (one part potass in four of water), and boil all together for an hour on a charcoal fire. Then, removing the vessel from the fire, pour in cold water, so as to cause the turpentine to consolidate itself at the bottom of the vessel. The alkaline solution is then to be poured off, and more cold water is to be added to the turpentine. Boil again for an hour. Remove the vessel from the fire, and, by the addition of cold water, reduce the turpentine to a solid state as before. Again pour off the water and add fresh. The operation should be repeated four or five times. The resin is at last to be carefully decanted, free from all sediment, into

pour cela. Recueillez ensuite la pégoula et conservez-la."— *Manuel*, &c. p. 40.

The mode of preparing the varnish composed of this concrete turpentine and inspissated oil is thus described. "Take of *péséri* [a drying oil] which has been baked in the sun four parts, of pegola three parts. Put them in a vessel on the fire to melt them together. Strain this varnish, and, in using it, expose the picture to the sun. Take care to let the first coat be as thin as possible, to avoid bubbles. If the mixture be too thick, so as to be difficult to spread, add naptha or raw péséri. If you have a good stock of mastic, take two parts of pegola and one of mastic [instead of three of pegola]. This mixture will give you a very good brilliant varnish."—Ib.

another vessel. In this mode it is as pure as possible; it has parted with its oleaginous or unctuous elements, and has acquired perfect whiteness." * The resin is said to be permanently colourless in varnishes only when it is prepared in this way.

The following recipes from the Venetian MS. are examples of "vernice liquida" with and without the concrete turpentine. "To make Painters' Varnish.—Take of linseed oil four oz., boil it in a copper vessel, removing the scum as long as it forms any; then take an oz. and half of sandarac in grain, and put it in another vessel, with a little of the aforesaid boiled oil in the bottom. Let it boil, and continue to add the oil, little by little, till you have poured in all. Let the ingredients still boil, for the more they boil the better [the varnish will be]; and take care that the fire does not reach the oil. This is a good varnish for varnishing whatever you please." † In another receipt, pulverised sandarac is added by degrees to the boiled oil; concrete turpentine (pece Greca), in the proportion of two thirds to the quantity of oil, is also

* Dreme, Der Firniss- und Kittmacher, &c. p. 56.

† "A fare la Vernixe de i Depinturi.—To ollio de semte de lino oz. 4 e mitelo a choxē ī una pignata de ramo e schiumalo bn̄ tanto che l nō geti piu schiuma e po toi oz. 1 ÷ de vernixe ī grana e mitelo ī una altra pignata e mitege uno puocho del sovra dito olio choto ī lo fondo e lassala coxere e chusi va azunzendo a pocho a pocho entro p̄ fina tanto che tugai meso dentro el dito olio e lassalo anchora buire e questo piu buie e miore è guardati che el fogo noge intra dentro. Quest' è fina v̄nixe da īvñigr̄ē ço che tu voi."

mentioned. A third receipt in the same MS. likewise includes the turpentine. "To make 'Vernice liquida. —Take of sandarac not pulverised one lb., linseed oil three lb., concrete turpentine three lb.; this will be good for varnishing cross-bows." * The gloss which the turpentine imparted was especially desired for implements and furniture; and, in the North, not less so for pictures.

The longer such a composition is suffered to boil, the thicker, and, in general, the more drying, the varnish will be; but it acquires, at the same time, a very dark colour. This the earlier tempera painters do not seem to have considered an objection. The old Byzantine varnishes are extremely dark, and may represent the practice of still remoter times, when the word "atramentum," applied to such compositions, was understood literally.† The pale Italian tempera pictures of the fourteenth century may have been improved by such brown glazings, and it is not impossible that the lighter style of colouring introduced by Giotto may have been intended by him to counteract the effects of this varnish, the appearance of

* "A fare Vernixe liquida.—To vernixe salda lb. 1., olio de semente de line lb. 3., pece grega lb. 3.; e sarà bona da ivernicare balestre."

† Mancini, the author of a MS. history of painting (to which Lanzi refers), written in the first half of the seventeenth century, speaking of the Byzantine pictures, observes that the varnish upon them was so dark (partly, no doubt, from the effects of time) as to render the figures almost invisible.

which in the Greek pictures he could not fail to observe. Another peculiarity in the works of the painters of the time referred to, particularly those of the Florentine and Sienese schools, is the greenish tone of their colouring in the flesh; produced by the mode in which they often prepared their works, viz. by a green under-painting. The appearance was neutralised by the red sandarac varnish, and pictures executed in the manner described must have looked better before it was removed. The later tempera painters ventured to think a paler varnish desirable. Cennini (c. 155.) directs that it should be procured as light in colour as possible, but the expression was relative, as a sandarac oil varnish can never be very light.

Such then was "vernice liquida," common and "gentile;" with and without concrete turpentine. In its most ancient form, it professed to be composed of amber and linseed oil; but it has been seen that there never was a time when amber and sandarac, as ingredients of varnishes, were very clearly distinguished. The ordinary "vernice liquida" was composed of three parts linseed oil to one of sandarac. It was sold in Cennini's time ready prepared; at that period it was still the customary varnish for tempera pictures, and served for various other purposes. When the white resin, or concrete turpentine, was added, the proportions of the oil and sandarac were not therefore altered. It appears that this last varnish was used in Venice,

but not at an early period in Florence; it was also common in the North: this may be explained by the greater facility with which the material, (turpentine) was procured in the Alps and in the neighbourhood of the Rhine.* The addition of mastic in "vernice liquida" was rare; it was occasionally used as a substitute for the sandarac, but not often as an ingredient with it.

The traditional estimation in which the sandarac varnish was held by the medieval painters, next leads us to ask, What were its practical recommendations? It will be remembered that the question can relate only to fixed-oil varnishes; even the Italians, not to speak of the painters of the North, were scarcely acquainted with essential-oil varnishes, as applicable to pictures, till the close of the fifteenth or commencement of the sixteenth century.† The ordinary sandarac varnish, or "vernice liquida," was thick in consistence, dark in colour, and slow in drying. Sandarac, dissolved in spike oil, or in alcohol, is not durable; but boiled with a fixed oil it is extremely so. All compositions of the kind are, however, affected by the air sooner or later; and

* The "poix blanche de Bourgogne," as prepared at Strassburg, was long in repute. — *Pomet, Histoire Générale des Drogues*, t. ii. p. 67.

† Varnishes composed of resins and essential oils are not to be confounded with the essential oils alone, which appear to have been used for various purposes at a very early period, and, in the improved oil painting, may have been employed as diluents.

most tempera pictures of the fourteenth and fifteenth centuries now look as if they had never been varnished. In Mr. Warner Ottley's interesting collection of early Florentine pictures, the remains of the red "vernice liquida" are to be seen on a few only.* The process of the decay which takes place in the thick oleo-resinous coating is plainly to be traced. The varnish cracks, in general without affecting the tempera underneath; a proof that the former had been added when the work was quite dry and firm †: the spaces between the cracks increase, till, by degrees, the resinous layer is reduced to islands. In some tempera pictures large spaces may be observed to be quite free from the brown varnish, while it remains in detached spots on other parts. A picture in such a state is generally freed by the cleaner from the remaining crust (being then generally re-varnished with an essential-oil varnish); but the vestiges of the older coating, if left to pulverise, would in time disappear, the painting itself often remaining in a solid and uninjured state. The amber and copal varnishes, when made without care, are also extremely dark in colour; if unassisted by siccative ingredients, they dry even more

* These pictures were collected by the late William Young Ottley towards the close of the last century, and are interesting even in a technical point of view, from the circumstance of their having never been retouched.

† Cennini (c. 155.) recommends that, if possible, the varnish should not be applied to (tempera) pictures till some years after they are painted; at all events, not till after one year.

slowly than the ordinary "vernix" or sandarac, but they are much more durable: hence it may be concluded that brown varnishes of great age, if entire, were composed of one or other of those substances. The ancient varnishes had thus nothing but their durability to recommend them. Their great defects were, the darkness of their colour, and their slowness in drying.

We now return to Vasari and Van Eyck. The varnish which required the sun's heat to dry it, so that the panel split, may be safely pronounced to have been the customary sandarac oil varnish, made no doubt with care, but still defective.* When Van Eyck undertook to prepare a varnish which was to dry in the shade, his first step, according to the narrative, was to ascertain whether the oil which was commonly used was really the most drying. His experiments confirmed the received opinion; for, although he pronounced both for linseed and nut oil, it does not appear that either was preferred

* Baldinucci (apparently following Pacheco, *Arte de Pintura*, p. 370.) states that before the accident of the splitting of the panel, Van Eyck had improved the varnish for tempera pictures, which is by no means improbable. The historian, however, adds that the varnish was still very slow in drying: "era difficile e pericolosa a seccarsi." (*Notizie de' Professori*, &c. vol. v. p. 94.) These and similar statements may be considered gratuitous, and as inferences only from the main facts recorded by Vasari. They are however important, in as much as they represent the opinions of artists and writers on art at a time when the traditions of an earlier practice were not entirely forgotten.

to the other.* "These, then," says the biographer, "boiled with other ingredients of his, produced the varnish which he, nay, which all the painters of the world, had long desired."

The object so "long desired" was, above all, to make the varnish drying, and at the same time as colourless as possible. There was the greater reason for endeavouring to secure the latter quality, because the picture was no longer to be placed in the sun, and the bleaching action of strong light was now not to be reckoned on. In later times, as will be shown, pictures were again placed in the sun, at intervals, in order to remove yellowness, and to prepare them for varnishing; even panels were, with due precaution, so exposed, and, if the picture happened to be executed on cloth, the practice was quite safe. But, at the period and under the circumstances in question, it was an especial object to avoid so exposing the picture, on account of the accident that had occurred. Cennini (c. 155.) desired precisely what Van Eyck desired: viz. a varnish that would dry in the shade. He knew that boiling it long would render it more drying, but at the same time inconveniently dark

* It has been sometimes assumed that Van Eyck was the first to employ nut oil: this, as the facts before adduced prove, is a mistaken notion. He may, at most, have restored it to favour. His having occasionally used it shows that lightness of colour in a vehicle was an object with him. He may afterwards have found that this oil yellows in time nearly as much as linseed oil.

in colour. The general nature of Van Eyck's varnish is, therefore, explained by his success; it was drying, without being dark.

Among the "other ingredients" there can thus scarcely be a doubt that a dryer was used; for by this means the primary object was attained, without the long boiling which Cennini thought essential. For the rest, the actual state of Van Eyck's pictures becomes an important part of the evidence to be considered. From the appearance of those works competent judges have concluded that a very firm resin was used; and hence it appears probable that the enterprising artist may have gradually perfected the methods of dissolving amber or copal in oil; the improvement consisting in the lighter colour of the solution. The early traditions of the neighbouring schools, which immediately affect this question, will be examined hereafter.

It is to be remembered, that up to a certain stage of his experiments Van Eyck had aimed only at preparing a better varnish for tempera pictures; and the composition, according to custom, was no doubt still thick in consistence. The next step was to mix this varnish with the colours. It is in the description of this process that the words employed by Vasari are ambiguous; as if contrived to suit, on the one hand, the true account of the Flemish method, which he had received; and, on the other, the altered practice of his own school, and the views of those who imagined

that Van Eyck had literally invented the drying oils and oil painting. The biographer says: "Having tried many things, both pure and mixed together, he (Van Eyck) at last found that linseed oil and nut oil, among the many which he had tested, were more drying than all the rest. These, therefore, boiled with other mixtures of his, made him the varnish &c. . . . After having made trial of many other things, he saw that the immixture of the colours with these kinds of oils gave them a very firm consistence (tempera), which when dry was not only proof against water, but lit up the colour so powerfully that it gave a gloss of itself without varnish." *

The expression, "these kinds of oils," strictly refers to the oils boiled with other mixtures or ingredients; but it may also refer to the two "kinds of oils" before mentioned, unmixed with resins. The latter sense would favour the opinions of those who believed that Van Eyck was the first to mix colours with oil. But the sense intended by Vasari (not to lay any undue stress on his syntax) can be best arrived at by ascertaining what he could *not* mean. He speaks of "vernice liquida" as having been employed by Italian painters who sought to remedy the defects of tempera before the Flemish method of oil painting was practised in Italy. As a painter he must have known what other writers of his time, such as Cardanus and Matthioli, knew,

* See the original passage quoted p. 204.

viz. that "vernice liquida" was partly composed of linseed oil, and that it was the ancient and customary varnish for tempera pictures. In the life of Agnolo Gaddi, he says that Cennini taught the application of oil colours for various purposes, "but not for figures." It is, therefore, impossible that Vasari, knowing what he did, could intend to state either that Van Eyck had invented linseed oil, or that he was the first to mix oil with colours.

What the biographer really meant is apparent from the context. He proceeds to state that the colours mixed with Van Eyck's vehicle were proof against water. This cannot be said of all colours mixed with unprepared oil, as every painter knows; examples of pigments applied with oil, but which may be easily removed, when dry, by water, are given by Leonardo da Vinci *, and by a Spanish writer. † Vasari states further, that the immixture of the colours with the medium used by Van Eyck alone sufficed to give them a gloss, so that they required no varnish. This, too, cannot be said of

* "Il verde fatto dal rame, ancorchè tal colore sia messo a olio, . . . se egli sarà lavato con una spugna bagnata di semplice acqua comune, si leverà dalla sua tavola, dove è dipinto, e massimamente se il tempo sarà umido: e questo nasce perchè tal verderame è fatto per forza di sale, il qual sale con facilità si risolve ne' tempi piovosi, e massimamente essendo bagnato e lavato con la predetta spugna."—*Trattato*, Roma, 1817, p. 124.

† "Si se lava un quadro despues de seis años, se ha de ir á pasear la laca [el carmin]."—*Palomino, El Museo Pictorico*, &c., en Madrid, 1715–24, l. v. c. 4.

mere oils, unless they are thickened to a state which would render them unfit for precision and sharpness of execution. It may here be observed, that if the word "tempera," as used in the above passage by Vasari, is to be taken in the sense of "medium" (which however is not assumed), the expression, "gave them a very strong tempera," is most applicable to an oleo-resinous vehicle. Cennini observes that "vernice liquida," mixed with colours, "is the strongest tempera there is." * Again, Baldinucci, who, as an Italian and a writer on art, may be considered a competent judge of Vasari's language, and who, as a biographer of Flemish as well as other painters, was likely to consult his Flemish contemporaries on all technical points relating to their school, paraphrases the passage in question as follows. "He [Van Eyck] tried and retried many oils, resins, and other natural and artificial things; and at last clearly ascertained that linseed oil and nut oil dried more readily than any other [oils]. With these he boiled other substances till he invented this beautiful and useful method, resisting water and every shock, which renders the colours more lively," &c.† Baldinucci thus seems to have

* . . . "vernice liquida, la quale è più forte tempera che sia." — *Trattato*, c. 161.

† "Provò e riprovò molti olj, rage, et altre naturali e artificiali cose: e finalmente venne in chiara cognizione che l' olio del lino e quello delle noci eran quelli che più d' ogni altra cosa da per se stessi seccavano. Con essi faceva bollire altre materie, finchè venne a ritrovare questo bello e util modo resistente all' acqua

understood that the drying varnish, not mere oil, was mixed with the colours. A reference to certain technical considerations will perhaps remove all further difficulty on this point. It is to be remarked, that most colours require to be first ground in oils alone (without resinous ingredients), the oleo-resinous varnish being more conveniently added to each tint afterwards. This may afford a satisfactory defence and explanation both of Vasari's words and meaning; since his expression, "the

e a ogni colpo, che rende i colori assai più vivi," &c. — *Notizie*, vol. v. p. 95.

Having rested on Vasari's statement as the earliest, and, indeed, the only, account of Van Eyck's method (for all later descriptions are borrowed from that account), it has been considered essential to adhere to the biographer's words, and endeavour to interpret them correctly. But it may now be added, that the appearance of Van Eyck's pictures led a modern investigator to the same conclusion which has been arrived at in the explanation of the above passage. Merimée, in his treatise *De la Peinture à l'Huile* (p. 7.), observes, speaking of Van Eyck: "L'objet de ses recherches n'eût été qu'imparfaitement rempli, si les couleurs, préparées comme les nôtres, également susceptibles de s'emboire, eussent exigé l'application ultérieure d'un vernis pour en faire ressortir la transparence et l'éclat. Quelque probable que cette supposition paraisse, ce n'est pas sur une pareille base que mon opinion pouvait s'établir : elle est le résultat d'un examen approfondi des anciennes peintures à l'huile. Cet examen, entrepris pour connaître les procédés primitifs, m'a démontré que, dans les tableaux de Van Eyck et des peintres qui suivirent sa méthode, les couleurs n'ont pas été délayées simplement avec une huile plus ou moins siccative ; mais qu'on y mêlait des vernis auxquels on doit attribuer l'étonnante conservation de plusieurs des plus anciennes peintures dont l'éclat surpasse celui de la plupart de celles du siècle dernier."

immixture of the colours with these kinds of oils," embraces both conditions. The method here alluded to will be further explained by some examples of early German or Flemish processes in the next chapter.

The varnish of Van Eyck was, therefore, oleo-resinous; and its immixture with the colours supposes that it was previously rendered nearly colourless. Still, this result, by whatever means effected, may not have been attained at once; the first inventor, Hubert, may have been content with a darker medium, and it has been observed (without reference to this question) that his pictures and those of his scholars are, not unfrequently, really browner in tone than those of John Van Eyck.* The improvement, indeed, is likely to have been gradual in all respects, and Vasari was quite safe in asserting that it was so. For the same reason, the extent to which tempera was employed in the first experiments may have been far greater than in the later works of these painters. The thickness of the vehicle, in its less perfect state, rendered it fit only for flat glazing tints: till that defect was remedied (and it must have been remedied early) pictures executed in the new process could have been little more than tempera preparations, tinted with transparent varnish colours. This method happens to be exem-

* Passavant, Kunst-Blatt, 1833, No. 82. Ib. 1841, No. 5.

plified in a picture before mentioned, by King René of Anjou, which is now preserved at Villeneuve, near Avignon. The imperfect execution, in this instance, is partly to be explained by the peculiar habits of the royal artist, and his predilection for missal-painting and illuminating; for, at the period when he may have corresponded with John Van Eyck, that painter had attained the zenith of his practice. But the habits of an individual here represent those of a period; the adoption of the oleo-resinous mode of painting by one who commonly practised tempera exemplifies the transition which the first efforts of Hubert Van Eyck must have exhibited. In the further consideration of the subject it will be shown that the assumed origin of the Flemish system of oil painting affords a satisfactory explanation even of some peculiar methods of the school.

It is, indeed, already apparent that there is nothing in Vasari's account of Van Eyck's process which is at variance with the habits of the time and country where that process was perfected: on the contrary, the reasons before given for placing faith in the biographer's statement have rather been confirmed by the examination of the statement itself. The occasional ambiguities in Vasari's language, and his errors in dates, leave the main facts unimpaired. That he was not ignorant of the extent to which oil painting had been practised before the time of the Van Eycks is certain; but, as the *art* of

painting in oil, properly so called, really began with them, he may be excused for omitting any notice of earlier and far inferior attempts.

Assuming, then, his account to be generally correct, and viewing it in connexion with the technical details that have been traced, not forgetting the actual appearance of the Flemish artists' works, it may be concluded that Van Eyck's vehicle was composed either of linseed or nut oil, and resinous ingredients of a durable kind; that it was drying; that, being intended to be mixed with the colours, it was essential that it should be, itself, nearly colourless; and, lastly, that it was of a consistence (though no doubt varied in this respect as occasion required) which allowed of the most delicate execution. Thus much is to be deduced from the evidence hitherto examined. The nature of the resinous ingredient, of the dryer, and of the diluent which may have been used, together with the mode of preparing and purifying the oil, will be considered in the next chapters.

It may now be expected that some opinion should be expressed as to Van Eyck's claims to the fame of an inventor. With former writers on the origin of oil painting this has been the favourite question *:

* Those who have set out with the impression that Van Eyck discovered something, and that the "secret" is now lost, have each thought it necessary to advance some hypothesis; and various absurd conjectures have been the result. Of the writers whose conclusions have been based on facts and the careful examination

it is here comparatively unimportant. The technical improvements which Van Eyck introduced were unquestionably great; but the mere materials employed by him may have differed little, if at all, from those which had been long familiar. The application of oil painting to figures and such other objects as (with rare exceptions) had before been executed only in tempera, was a consequence of the improvement in the vehicle. Still, if we ask in what the chief novelty of his practice consisted, we shall at once recognise it in an amount of general excellence before unknown. At all times, from Van Eyck's day to the present, whenever nature has been surprisingly well imitated in pictures, the first and last question with the ignorant has been — What materials did the artist use? The superior mechanical secret is always supposed to be in the hands of the greatest genius, and an early example of sudden perfection in art, like the fame of the heroes of antiquity, was likely to monopolise and represent the claims of many. It is apparent that much has been attributed to John Van Eyck which was really the invention of Hubert; and both may have been indebted to earlier painters for the elements of their improved process. It would be useless now to attempt to divide these claims; and, although some important discoveries of the

of pictures, Merimée may be considered the most rational. His treatise, already quoted, was translated into English by W. B. Sarsfield Taylor, 1839.

elder brother may be ascribed to the younger, it may be safely concluded that much was also due to the investigations and intelligence of the latter. The works of John Van Eyck show that he was endowed with an extraordinary capacity for *seeing nature;* thus gifted, and aided by the example and instructions of Hubert, a world was opened to him, which his predecessors had not attempted to represent. The same mind which was capable of receiving such impressions was also likely to devise suitable means to embody them, and to extend the language of imitation. That the most scrupulous operations of the laboratory should be carried on together with the most devoted practice of art, is quite consistent with the habits of the early painters; but with Van Eyck there was a controlling judgment which kept the end steadily in view, and which gave utmost efficacy to well chosen materials by a process which, in every stage, was calculated for brilliancy of effect and durability. This process will be described and exemplified where facts or documents afford the materials for so doing. The traditions respecting the oleo-resinous vehicles used at an early period in Germany and Flanders will require to be first examined.

ADDITIONAL NOTE (see p. 231.).

SOME medical writers quoted by Salmasius (*Exercitat. Plinianæ*, c. lii.) speak of a kind of red nitre called *βερνικάριον*. He supposes that this substance received its name from the

colour of amber (*βερενίκη*), as the common amber varnish had a red hue; and refuses to admit the conjecture of those who derive the name from the Egyptian or Ethiopian locality, the city Berenice, where the nitre may have abounded, or where it may have been chiefly imported. "Ab ea beronice electro genus nitri dictum est *βερνικάριον*, quod esset simile fulvo succino. Neophytus: *βερνικάριον, τὸ πυῤῥὸν νίτρον*. Nicomedes: *βερνικάριον, νίτρον ἐρυθρὸν, οἱ δὲ ἤλεκτρον, οἱ δὲ βερονίκην*. Hujus nitri mentio apud Myrepsium, quod perperam ab urbe Æthiopiæ Berenice dictum autumat Fuchsius. Immo ab electri colore, ut ne mireris et vernicem inde nominatum."

The great critic does not seem to have been aware that Galen twice uses the word *βερενίκιον* as a synonyme for a species of nitre (*De Methodo medendi*, lib. viii. c. 4.; *De Composit. Medicamentor. per Genera*, lib. iii. c. 11.). If, therefore, the term was so appropriated from the resemblance of the colour of the said nitre to amber, it would follow that the word *βερενίκη*, as a synonyme for the latter, must have been in use before Galen's time. The term appears, however, in no writer so ancient. The probability, therefore, is, that the nitre was named from the place where it was found.

The date of the word *βερενίκη*, as a designation for amber, has not yet been traced beyond the eighth century; though its origin is probably much earlier. The supposition (see p. 231.) that it may have had reference to Berenice's golden hair receives some confirmation from an opinion expressed by H. Stephanus (*Thesaurus*, in voc.). In giving two words from Hesychius, —*βερονικίδες*, certain sandals worn by women, and *βερονίκιον*, a kind of herb,—he observes of the first, "procul dubio a Beronice regina, cujus *πλόκαμον* quoque dicit [Hesychius] inter astra relatum fuisse;" and of the second, "a Beronice regina denominatum fuisse verisimile est."

It should be observed that the modern Greek writer Agapius, quoted by Ducange with reference to the word *βερενίκη* (as a synonyme for sandarac), cannot be considered an authority of weight as regards the early use of the term, since he lived in the seventeenth century. See Fabricius, Bibl. Græc. Hamb. 1802, vol. viii. p. 24.

CHAP. IX.

OLEO-RESINOUS VEHICLES.

The use of resinous solutions, combined in various proportions with oil, as a medium or *vehicle* for the colours, was an early technical characteristic of the Northern schools, and merits attention here accordingly. An account of the principal materials which have been so employed, from the commencement of the fifteenth century, would be manifestly incomplete without a description of the methods adopted at different periods for purifying and preparing the oil, the chief ingredient in such compositions. Those methods will, therefore, require to be specially considered; but it will be more consistent with the order hitherto followed to begin by examining the nature of the resinous substances which were in use among the early Flemish painters; the modes of purifying the oils having been common both to the Northern and Italian schools.

In the preceding chapter it has been shown that the varnishes which were first employed were far from being light in colour. The early painters, however attentive to use a colourless oil when it was to be mixed with pigments, were by no means

solicitous that the varnish applied to tempera pictures should be equally light. In preferring a browner hue for the oleo-resinous compound which they spread over their works, they may not only have been influenced by the traditional practice of the Byzantines, but their researches into the accounts of ancient painting may have led them to conclude that the varnish of the best artists of Greece was of a similar description.* The ordinary composition of sandarac and linseed oil, as already stated, inclined to a red colour; and the medieval painters were so accustomed to this appearance in varnishes, and considered it so indispensable, that they even supplied the tint when it did not exist. Thus Cardanus observes that when white of eggs was used as a varnish, it was customary to tinge it with red lead.†

This taste had already declined even in Cennini's time, before the introduction of the Flemish system of oil painting into Italy ‡; and, as soon as a varnish for tempera pictures began to be used as a vehicle for pigments, the same reasons which had

* Pliny, l. xxxv. c. 36.

† ... "ovi albo ac sandice factitio ... utebantur." — *De Subtilitate*, Basiliæ, 1554, p. 271. That Cardanus understood "sandix" to mean red lead is apparent from the following passage in the same work: "E cerussa sandix fit coloris rubicundi venustissimi."— Ib. p. 172.

‡ "Adunque togli la tua vernice ... chiara la più che possi trovare." — *Tratt.* c. 155.

recommended colourless oils for such a purpose dictated a corresponding change in the nature of the varnish, which was now required to be as light as possible, so as not to alter the tints with which it was mixed. In order to trace this change, it will be necessary to remember the habits of the tempera painters during the fourteenth century.

A tempera picture, when it had been kept long enough after its completion to acquire due hardness of surface, received a brown-red coating of thick "vernice liquida," which was spread with the hand or with a sponge; the painting being exposed to the sun during, or immediately after, the operation, till the varnish so applied was dry. The paleness or freshness of the tempera may have been sometimes calculated for this brown glazing (for such it was in effect), and when this was the case, the picture was, strictly speaking, unfinished without its varnish. It is, therefore, quite conceivable that a painter, averse to mere mechanical operations, would, in this final process, still have an eye to the harmony of his work, and, seeing that the tint of his varnish was more or less adapted to display the hues over which it was spread, would vary that tint, so as to heighten the effect of the picture. The practice of tinging varnishes was not even new, as the example given by Cardanus proves.* The next step to this would

* As the varnish for figures was reddened, so the varnish

be to treat the tempera picture still more as a preparation, and to calculate still further on the varnish, by modifying and adapting its colour to a greater extent. A work so completed must have nearly approached the appearance of an oil picture. This was perhaps the moment when the new method opened itself to the mind of Hubert Van Eyck; and, making allowance for the inexpertness of a far inferior painter, this is the stage of the art which King René's picture at Villeneuve exhibits. The next change necessarily consisted in using opaque as well as transparent colours; the former being applied over the light, the latter over the darker, portions of the picture; while the work in tempera was now reduced to a light chiaroscuro preparation. The ultimate modifications of this practice, as exemplified in some paintings by John

spread over white metals to imitate gold, or sometimes even over gilding itself, was yellow. It is remarkable that this gold lacker, perhaps the most ancient of the tinted varnishes, should also have remained longest in use, not for its original purpose only, but to give richness to certain colours with which it was mixed. The English treatises of the seventeenth century may generally be considered to represent the Dutch or Flemish practice of that period. In *The Art of Painting in Oyl*, published in 1687 under the name of Smith, we find the following passage. "If you steep *Ornoto* (annotto) in clear well sunned linseed oyl, or oyl of wallnuts, it will tinge the oyl of a delicate golden colour; which oyl so tinged exceeds all others for the laying on of vermilion, red lead, orpiment and masticot; to all which colours it gives an excellent lustre." A less fugitive dye may be supposed to have been substituted for annotto in important operations.

Van Eyck and his followers, will be considered in another chapter.

It was now that the hue of the original varnish became an objection, for, as a medium, it required to be itself colourless: but, although a considerable improvement was possible in this respect, perfection was unattainable, and the difficulty was only to be met by adapting the methods of the art to the conditions with which it had to deal. The alteration or yellowing of the colours in oil painting, by means of the vehicle with which they are mixed, is an objection applicable not only to the amber, copal, and sandarac varnishes, but, in a certain degree, to all others. Even the bleached oil prepared according to the directions of Cennini, or according to other more perfect processes, would, without due precautions (to be noticed hereafter), become yellow in a short time.* The mode in which the tint of the varnish adopted by the first oil painters may have been lightened is explained by the operations of later schools. When a speedily

* The advocates of other methods of painting, and especially of the encaustic process, have not failed to point out this unavoidable defect in the chief material of oil painting. Montabert, one of the most enthusiastic eulogists of encaustic, assumes that the ancients were not unacquainted with oil painting, but rejected it for the method which he extols. The same writer, with Rubens's Luxembourg Gallery before his eyes, makes the following observation. "Si l'on eût proposé à Apelle d'essayer les procédés de Van Eyck, Apelle eût souri de pitié." — *Traité complet de la Peinture*, Paris, 1829, vol. ix. p. 5.

drying varnish was employed, it was usual, and indeed on every account advisable, to thin it for the lighter colours, which dried readily without such assistance, and which required the lightest and most unchangeable medium. Cennini remarks that "vernice liquida" is the strongest of all vehicles *, and if the term be supposed to include amber, called by Rossello "vernice liquida gentile," there can be no doubt that it is so. The degree of strength in that varnish, as it was originally prepared, was more than requisite in its new application as a binding medium for colours; it consequently admitted of being diluted, and was thus, at the same time, rendered lighter in colour. The tempera painters had already thinned their varnishes, even while used as such, by increasing the proportion of oil; they had also sometimes lightened them by the admixture of "white resin" (though this was chiefly intended to produce a greater gloss); and, when the "liquid vernix" was used as a vehicle, its quantity in proportion to pure oil, though varied according to the nature of the colours, was still further diminished.

By this economy in the use of the varnish, the yellowing of the lights was, in a great measure, prevented, while the speedy drying and transparency of the dark tints were at the same time secured: the quantity of the resinous medium every-

* Trattato, c. 161.

where used was still sufficient to maintain an equal gloss, so that the work required no additional varnish at last. But besides this mode of gradually diluting the darker varnish, it also appears that the resinous ingredient itself was varied for different purposes; indeed certain colours, as will hereafter be shown, had their particular vehicles. To whatever uses the mastic oil-varnish, or the weaker turpentine dissolved in oil, was applied, it is clear that both were in demand at an early period, and we find a Flemish painter, Lonyn of Bruges, furnishing the "white varnish" on one occasion to the painters of St. Stephen's Chapel.* These circumstances are not to be overlooked in examining the earliest records of the vehicles used in Flanders subsequently.

Instead, therefore, of supposing that the first oil painters had achieved impossibilities by inventing a permanently colourless varnish, it may rather be concluded that they had the sagacity to adapt their processes to their materials; knowing that the most carefully prepared vehicle (and that which they employed was doubtless of the purest kind) may, without due precautions, still affect the tone of a picture disadvantageously. However simple the Flemish system of oil painting may have been, and however lasting its general tradition, its methods were considerably modi-

* "Lonyn de Bruges pro VI. lb. di. de verniz blank," &c. The passage has been before quoted.

fied even by the first scholars of the Van Eycks; proving (if any proof be necessary) that what is called "the secret" was of little use without intelligence to employ it as circumstances required. Antonello da Messina, to judge from some of his productions, used a dark, oleo-resinous, and flowing vehicle too indiscriminately; Peter Christophsen has the brown shadows of Hubert Van Eyck; Hugo Van der Goes is sometimes yellow in his flesh; while Gerard Van der Meire scarcely overcomes the pale hues of the tempera painters. The Flemish inheritors of Van Eyck's method, who may be said to come nearest to his technical excellencies, are Roger of Bruges and Memling.

The foregoing observations, founded on the now well-known habits of the early tempera painters, furnish an explanation of the peculiar methods of the first oil painters, by supposing that a composition which had been originally used as a varnish was, as it were imperceptibly, adopted as a vehicle for the colours; the resinous ingredient being subsequently reduced in quantity, and even varied in kind, as required. This explanation agrees with the account of the method which Vasari gives (that writer's story of the panel splitting in the sun — a not improbable accident — being left to its own merits): it agrees also with the appearance of existing works by Van Eyck. It remains to show that it fully coincides with the

evidence to be gathered from the oldest documents relating to the Flemish practice: these are now to be examined.

The scanty but precious traditions which belong to the fifteenth century first invite our attention. The materials as yet found exist in two treatises, or rather collections of receipts, — a manuscript (already noticed) which is in the public library at Strassburg, and a manuscript in the British Museum. In the passage which has been quoted (p. 130.) from the former, describing the preparation of a drying vehicle, the writer states that "all painters were not acquainted with this oil." This expression is to be regarded as part of that internal evidence which, it was observed, rather warrants the inference that the receipt in question is not older than Van Eyck's time. Whatever may have been its original date, it was certainly recorded in its present form within the century when the Flemish system of oil painting was invented; and, in all probability, comprehends the chief improvements which were introduced with that system. It possesses the general requisites which were defined in the last chapter from an examination of Vasari's statements as compared with other evidence; indeed it might serve as the text for Vasari's description: at the same time showing that such conditions may be fulfilled in various modes. Referring to the passage before quoted from the MS. it will be seen that drying ingredients

are first boiled with the oil, not with the varnish; the colours are ground in this oil, and the varnish is subsequently incorporated with them; an additional quantity of the dryer is then mixed with such colours as require it. The passage, wherein the immixture of the varnish with each tint is described, is as follows:—

"Here observe that all these colours are to be well ground in the oil, and, at last, with every colour mix three [that is, a few] drops of varnish, and then place every colour by itself in a clean cup, &c." *

A definite quantity is here put for an indefinite one, which would necessarily vary according to the

* . . . "hie merke dis varwen sol man alle gar wol riben mit dem oli und ze . . . . . so sol man under ieglich varwe drie troph virnis riben und tu denn ie die varw sunder in ein rein geschirr," &c. The missing word "hindrest" (effaced or illegible in the MS.) fortunately occurs in a parallel passage, before given (p. 137.), describing a gold size: "Und wenn dis alles wol geriben ist so rib ze hindrest in die varwe ein halb nuschal vol virnis," &c.

It appears that this manuscript came originally from a monastery. The compiler, probably a monk, practised the healing art and painting, and, as an amateur designer, was not likely to exceed the dimensions to which the best artists in Germany and Flanders commonly restricted themselves. His figures being small, the quantity of colour and of varnish mixed in each tint would be minute in proportion. In a description of a drying oil communicated to De Mayerne by a Flemish painter (17th century) we read: "Laissez rasseoir et guardez pour en mesler *une goutte ou deux* sur la palette avec vos couleurs broyées." — *MS.* p. 96.

nature as well as the quantity of the colour; the (oil) varnish, as will be seen, was so thick that it could only be added in small quantities to some tints. The resinous materials are sandarac, mastic, and "gloriat" or turpentine. They are described as forming, with oil, three separate compositions; and it may be inferred that each was to be mixed with the colours according to the lightness or darkness of the colour and the varnish.

"Here I will teach how to make a good varnish of three materials — a good and superior varnish out of each of the materials separately. In the first place take 1 lb. of sandarac or of mastic, whichever you please, and pulverise it in a clean mortar. Then take 3 lb. of linseed oil, or hempseed oil, or old nut oil, and boil this in a clean vessel, skimming it and taking care, above all, that it does not run over. After it has boiled and has been skimmed [throw in and] stir the powdered resin little by little in the boiling oil: thus the powder dissolves in the oil. When it is quite dissolved let the varnish seethe gently with a moderate heat, stirring it continually that it may not burn; and when you find that the composition has become thick, like melted honey, take a drop of the varnish on a knife, and, after suffering it to cool a little, touch it and draw your finger slowly off; if the varnish strings it is well boiled, but if not, boil it better till it strings. Then take it from the fire and suffer it to cool; strain it through a strong

piece of linen, wringing it through the cloth into a clean glazed vessel, and keep it well covered for use. Thus you have an excellent and clear varnish of the best kind.

"And if you wish to make another good varnish, as clear and lustrous as crystal, get 1 lb. of 'gloriat' from the apothecaries' shops and [add] twice the quantity of oil. Let them boil together, and prepare this in all respects like the former varnish; as soon as it strings it is sufficiently boiled, and is in the right state." *

* "Hie wil ich leren gut virnis machen von drierley materien do usser ie der materie sonderlich ein gut edler virnis. Zu dem ersten nim des gemeinen virnis glas ein phunt gewegen oder mastik ein lib. und stosse der eins weders du wilt in einen reinen mörsel ze bulver und nim darzu drie phunt lin ölis oder hanf ölis oder alt nus öli und las das siden in einem reinen kesselin und schum das öli und hüt vor allen dingen das es nüt überlouffe und wen das erwallen ist und geschumet ist so rer das virnis bulver langsam nach enander in das heiss öli so zergat das bulver in dem olin und wenn das bulver gar zergangen ist so las den virnis sieden gar senfteklich mit kleiner hitze und rur den virnis ie ze stunt das es nüt anbrünne und wenn du siehest das der virnis gerattet dikelecht werden als zerlassen honig so nim ein troph des virnis uff ein messer . . . . . und lass den troph einwenig kalt werden und griff mit einem finger uff den troph züch den finger langsam uff und lat der virnis ein fedemlin mit dem finger uff ziechen so ist der virnis und ouch wol gesotten und lat er aber des fademes nüt so süde in bas untz er den faden wol gewinnet und sol in von dem füre und las in erkülen und sich denn den virnis dur ein stark linen tuchlin und ringe den virnis gar dur das tuch in ein rein glazürt hafen und behalt den virnis wol bedeket untz man sin bedarfft so hast du guten edelen lutern virnis den besten.

"Wiltu aber ein andren guten virnis machen der luter und

The sandarac resin, which would form the darkest of these varnishes, is here called "gemeiner virnis glas," an expression which was before explained to be equivalent to "common amber," that is, sandarac, the substitute for amber. In another receipt (for a gold lacker) in the same MS. the term "virnis glas" occurs without the epithet "common," and the context shows that amber is meant.

"If you wish to make another gold colour with which silver, tin, or lead, may be [in appearance] gilt, so that the surface on which the composition is applied will look like fine gold, prepare the colour in this mode. In the first place take amber, pulverise and sift it; take also 1 lb. of oil, and having first boiled and skimmed it, stir the powder by degrees in the hot oil; continue stirring them together till the amber is well dissolved; then let it duly seethe at a great heat, and stir it unceasingly that it may not burn. And when it has become thick," &c.* Then

glantz ist als ein cristalle so nim gloriat in der appenteken 1. phunt und zwürent als vil ölis und las das ouch under enander sieden und tu im mit allen dingen als dem ersten und wenne er ouch einen faden gewinnet als der erste so ist er ouch genug gesotten und ist ouch gerecht."

* "Wiltu aber ein ander gold varwe machen domit man mag silber zin bli vergülden wo man si dar über strichet so schinet si als schön fin gold dise varwe mache alsus zu dem ersten nim aber virnis glas und stos das zu bulver und ruters durch ein sib und ein phunt ölis und las das öli vorhin erwallen und schum es und rur das virnis bulver langsam in das heiss öli und rur es under enander untz das virnis glas wol zergangen si und las es denn wol senftekliche siden an grosse hitze und rur es

follow the materials for tinging the varnish (the ancient "auripetrum") with a gold colour. The writer intimates that this composition was very valuable, and concludes: "This colour is to be preserved clean like the varnish, and whatever substance it is spread over, whether silver, tin, or lead, will become of a fine gold colour. It [the metal so varnished] is then to be placed in the sun till it dries: it will thus be beautifully clear and lustrous, and no moisture can injure it."* The greater heat required and the costliness of the varnish show that amber was here meant, and that the omission of the epithet "common" was not accidental. The cost was, no doubt, the chief reason why sandarac was generally used instead; but those who were willing to incur the expense, for the sake of having a choicer and still more durable varnish, would naturally employ the finer material.

The British Museum manuscript†, above mentioned, was written in the latter half of the fifteenth century: a former possessor of the volume mentions De Ketham as the author. The portion on painting is bound up with various other treatises,

je bi der wile das es nüt anbrounne und wenn es gerattet dikelecht werden" &c.

* ... "Und dise varwe sol man rein behalten als den virnis und was man mit diser varwe über strichet es si silber zin oder bli das wirt schön vin gold var das sol man an der sunne lan wol trocken werden so ist es schön clor und ouch glantz und mag in kein wasser nüt geschaden."

† Sloane MSS. 345.

some of which were written about the year 1500. De Ketham was a physician, known by at least one published work*; his language, in the MS. in question, is Flemish, but in one of his printed treatises he is styled "Alemannus," a term (like that of "Tedesco" with the Italians) which often comprehended the natives of the Low Countries. It will be remarked that the now familiar composition mentioned in the following receipt is described not as a mere varnish, but as a vehicle for the colours; thus again corroborating Vasari's statement: —

"To make a composition which serves for all colours. — Take 1 lb. of linseed oil and boil it one hour; then take 4 oz. of pulverised amber and put it into an earthen vessel, and pour on it as much of the aforesaid linseed oil as will cover it. Let it boil till the amber is melted, the solution must then be strained through a cloth and added to the first oil. Let it boil, and try on a slate whether it be strong enough. If it be so, add to it 1 lb. of resin [concrete turpentine], again suffering it to

* Fasciculum Medicinæ et alia quædam scripsit, Venet. 1495, See Jo. Alb. Fabricius, Bibliotheca Græca, Hamb. 1726, vol. xiii. p. 259. The *Fasciculus Medicinæ* to which De Ketham was the chief contributor, was several times reprinted; the earliest edition bears the date 1491. It is remarkable as being the first anatomical work with illustrations; the woodcuts appear to be by B. Montagna. Compare Rudolph Weigel's Kunstlager-Catalog, Leipzig, 1843, 13ten Abtheilung, p. 26.

boil a little. Then take it off, and it is ready."* This composition, though "serving for all colours," was necessarily mixed in different proportions with them after they were ground in oil. Some of the Flemish physician's receipts, as usual in such compendiums, relate to ordinary and mechanical processes, such as the preparation of gold sizes, and the printing of cloth with varnish colours; but, even in these, the materials and directions indicate the habits of the time. The chief dryer, as in the Strassburg MS., is [white] copperas; colours are first ground in water, and, when perfectly dry, in oil; the varnish (with which the copperas is sometimes boiled) is then added; and, when the colours do not dry readily, more copperas is mixed with them.†

* "Substancie tmaken daer alle wve indiñ.—R. I. lb. lyn olys end siđ een ure end dan nemt VIII. loet bernsteen ghepulvirt end doen dy yn een erden poot ende ghiten dar op lyn oly di voer gesad is dat di wynsteȳ bedowē ys myt den oly end laten dat syden also langhe dat de bernsteen gesmouī ys dy bernsteē soe sal met syghen doer een doeck eñ doent tostē irsī oly end latet siđ end pruvet op eȳ leye of het sterck genoch sy. End yst steerck genoch soe doet dar I. pont spigelhars yn end latent syđ een luttel end dan so settet af end dan ys bereyt."

The mode of dissolving the amber in a small quantity of oil, before the rest is added, is not to be recommended, as the solution is thus much more deeply coloured in consequence of the carbonisation of the oil. The solution of the amber alone, according to the directions of Theophilus (c. xxi. second receipt), answers better; but neither method is calculated to prevent the varnish from becoming very dark. The pale yellow vinous colour of the best amber explains the synonyme "wynsteyn."

† The following receipt, though relating only to a composition for printing cloth, throws some light on the general

Thus it appears that, in the early Flemish practice, the stronger kind of varnish, which was mixed

Flemish practice of the fifteenth century. "To temper all colours. — Take one lb. of linseed oil or nut oil, the older the better, half an oz. of mastic, half an oz. of copperas, two drams of frankincense, one oz. of [white] resin, two oz. of pale red lead of 160;[a] these being pulverised, mix all together. The oil should be first placed on the fire and suffered to boil, then the above-mentioned substances are to be added and stirred continually with a stick to which some cloth is affixed; this stirring and boiling should last two hours; and, in order to try the mixture with black or any other colour, take two parts of linseed oil and the third part from the ingredients above mentioned out of the vessel, with or without measure; and if the cloth [to be printed] be old or thin, add more of the composition from the vessel, otherwise the colour would run: but if the cloth be new and thick the proportion indicated is sufficient. You can then fill your prints with it if you think the colour black enough; but if the burnt black [which you have mixed with it] should not be deep enough, you can take vine branches and burn them in a pot till they are charred; then grind them with water and place them on a piece of chalk to dry. Add a sufficient quantity of this to the burnt black to make the impressions distinct. And all other colours, green or red, yellow or blue, are, in like manner, to be first ground with water only and suffered to dry; then they are to be tempered with oil and with the ingredients from the vessel above mentioned. And in winter, when the colour will not dry in well, grind a little copperas with it, then it will dry thoroughly. Item, cloth should be glazed with a glazing stone; all cloth intended to be tinted should be so prepared.

"Alle werven thoe tēperiren. — R. I. pont lyn oly of noet oly

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[a] The word ochre is sometimes used by the early writers as an adjective, in the Greek sense ὠχρὸς, pallidus. Thus Cardanus, in the passage on red lead before quoted, "ochra id est pallida." "Menie oker van CLX." may therefore mean white lead roasted to a certain degree of heat.

with the colours (previously ground in oil), was amber. In the preceding chapter it was explained that this substance was frequently confounded with copal; but, as the former was at all times more easily procured in the North, it may be concluded that in Germany and Flanders, at least, the term was correctly applied.*

hoe ouder hoe beeſ, I. loet mastic I. loet copercet, I. wirdel lots wirock al gepulverizirt end II. loet spiegelhars menie oker van CLX. IIII. loet ghepulverizirt end dit machmen al thoe samē. End men sal den oly irst opt fuer setten dat hy sydende wort. Soe salmen dan dese verscr̄ substanc̄ dar in doen end roreſ altoes myt eyn stock d'thoe ow loken aen gesteken. End dit roren end dit siden sal duren II. uren. End alst men pruven wyl myt zuarte of ander alrehande werve, so sel men nemen II. deel lynsaet oly end dat darden deel wtter wersc̄ substancie wt den pot met der maten of sondermaten. End ys dat cleet olt ofte dünne so doet dar meer hoe wtten pot of het sonde vloyen. Mer is dat cleet nyc̈ end dicke soe en yst gheennoet. Soe magdi dy printe dar mede wullen. Soe dat w dunc̄ dathet zwart genoch is. End ist sache dat het nyt genoch enhevet van gebranden zwarte so machmen nemen wȳrancke end bernen dȳ yn een pot alte kalen end wriven sy myt water end doen sy op eyn kryt steyn end latent drogen end doent totten gebrande zwarte alsoe wele dat het wel van den printe gaet. End alle ander werve het sy groen of roet gheel of blaeu. End dy machmen yrst werven wrieven mytten water end latense drogen. End temperense myt olye end myt substancie wt der poot versc̄. End wynterdaghes alst nyt weel drogen een so vriv̄ dar wat coperoet yn het sal theet drogē. Item men sal dat laken licken myt een lick steen dat suldi doen allen laken dy ghy werven wilt."

Another receipt directs that a gold size, if too thick, should be diluted with the oil of amber. "End is dy matery tho sterck so nem eȳ weinhg van bernsteen oly end menghet dar mede."

* It is, however, to be remembered, that during the opulent

The employment of these materials has its technical inconveniences: amber, especially, has a tendency to flow, and this may have been partly the reason why it was used in small quantities, and for particular purposes. Another objection to both, perhaps more applicable to copal, is their tendency to yellow. This seems to have been guarded against by using the varnish sparingly and much diluted in the lights; or even by substituting for it, in such cases, a lighter resinous solution. With regard to the methods of preparing the amber varnish, so as to be as light in colour as possible, it may be assumed that the best processes of the kind were known to Van Eyck. On the other hand, it is not to be supposed that modern chemists would have any great difficulty in obtaining results as successful; nor is it imagined that there was any particular secret in the operation which has been lost, or for which, if lost, an equivalent could not be found: but, in order to pursue the subject historically, some account will here be given of the ordinary modes in use, from the earliest to the later ages of oil painting, for preparing the amber varnish. The evidences of the abundance of the substance

days of Bruges almost every Oriental produce sought in Europe found its way to that city, as the central mart of the North. See Beaucourt de Noortvelde, Geschiedenis van den Brugschen Koophandel, quoted by Michiels, Histoire de la Peinture Flamande et Hollandaise.

itself, in the North of Europe, may be first recapitulated.

The best-informed ancient writers considered the North of Germany as the chief country of amber. The word "glessum" (glas, gläs), appropriated to that substance, according to Tacitus and Pliny, by the Germans, had evidently reference to its transparency. In what precise part of the shores of the Baltic we are to look for the Glessarian island of Pliny * we need not stay to inquire: amber is now found on the coast and under the soil of Prussia, and the chief marts for it are Dantzic and Königsberg.† In the Montpelier MS. "glassa" is called the German vernix (fernix gn̄a). A medical writer of the sixteenth century, speaking of amber, says that when it is dissolved in oil it forms the vernix of the Germans, other ingredients being added ‡; and some authors even derive the whole family of words belonging to vernix, not excepting the medieval Greek terms, from the German bernstein (amber, literally "burnstone"). §

* L. xxxvii. c. 11.

† See Hartmann, Succincta Succini Prussici Historia. Frank. 1677. Fernbach, Die Enkaustische Malerei, München, 1845, p. 139.

‡ "Ad magisterium succini pertinet etiam vernix Germanorum quando in oleo solvitur additis nonnullis."—*Andr. Libavii Singularia,* Franc. 1599, pars iii[a], p. 406.

§ Buttman, Mythologus, vol. ii. p. 362. Libavius, Singularia, ib. p. 594.

Pliny states that amber found its way from the North into Italy, chiefly by way of Venice; that it was therefore common in the plains of Lombardy, whence, in his opinion, the origin of the fable that "trees weep amber on the banks of Po." There, he adds, it was very generally worn in the form of necklaces, by women, for its supposed medicinal virtues, as well as for ornament.* The medical authorities of the middle ages inherited most of the prejudices of the ancients, and amber occupied an important place in their materials; its solution, by means of alcohol or volatile oils, in order to obtain what was called the "magisterium succini," was a favourite problem, and such experiments by medical investigators may have indirectly assisted the labours of Hubert Van Eyck. The substance itself was not less important as an accredited specific in the form of amulets: the virtues of the necklace long survived; the light golden colour being, for this use, preferred.† A specimen of such an ornament, as worn by the women of Bruges in the beginning of the fifteenth century, may be seen in the picture by Van Eyck in the National Gallery; it is suspended next the mirror in the background, and, as usual with the

* L. xxxvii. c. 11.

† See Libavius De Medicinis Succini externis, *Singularia*, pars iii[a], p. 649.; and, among various writers on the medicinal virtues of amber, Vesti, Dissert. de Succino physice et medice considerato. Erfordiæ, 1702.

accessories introduced by this artist, is exquisitely painted.*

The amber used by the Romans might have been obtained, in part at least, from Sicily, and even from some localities in Italy; the epithet Falernian seems, however, to have been applied to an admired German species, so called on account of its (pale yellow) vinous colour.†

From the above circumstances it will not appear extraordinary that the use of amber varnishes should have been general in the North at an early period. The facility of procuring the material was not the only reason for this: the requisites calculated to insure durability in a varnish (whether employed to protect furniture or other objects) are, hardness combined with toughness, resistance to humidity, and that lasting smoothness of surface, affording no minute receptacles for dust or moisture, which is indicated by a perfect gloss. The amber varnish (like that of copal), when duly prepared, possesses these recommendations, and a mechanical perfection, as usual in the infancy of art, was at first the chief object proposed. But such qualities were also especially adapted for a

* It is not quite clear whether this is a necklace or a *corona* (beads for counting prayers). On the amber beads, see Libavius De populari Usu Succini, *Singul.* pars iii[a], p. 644. &c.

† "Falernum et chryselectrum eandem speciem esse conjicimus."—Ib. p. 676. "Succinum falernum: Weinklarer Agstein, oder Bornstein."—*Rulandus, Lexicon Alchym.* Franc. 1661, voc. Succinum.

humid climate; and thus the technical characteristics of the early Flemish painters (such characteristics, at least, as were compatible with higher aims in art) became habitual, and are to be recognised even in some of the highest examples of the school.

In the ancient mode of dissolving amber for varnishes, no precautions whatever were taken to prevent the composition from becoming dark. The process sufficed at all times for ordinary purposes, and hence it often reappears with little change. The following example is given by Libavius (sixteenth century). "Take three lb. of linseed oil; of burnt alum, purified turpentine, and garlic, each half an oz. Mix these in the oil and boil it till it ceases to froth. Then take one lb. of amber, place it in a vessel, the cover of which has an opening about the size of the little finger. Pour in a little oil. Melt the amber on a tripod and stir it with an iron rod inserted through the opening in the cover, to assist the liquefaction. When dissolved, mix it with the oil before prepared, and boil to the consistence of a varnish." * The resemblance of

* "Olei lini libras tres, aluminis usti, resinæ depuratæ, allii, singulas semiuncias, misce et coque donec cesset spuma. Cape postea succini libram, pone in ollam cujus operculum habeat foramen amplitudini digiti minoris quem auricularem vocant. Affunde parum olei, coque super tripode et ferreo bacillo per foramen inserto move ut eliquescat. Cum delicuit solutumque est affunde oleo ante præparato ut dictum est et coque ad consistentiam vernicis."—*Libavius, Singularia*, Franc. 1599—1601, pars iii[a], p. 648.

this receipt, in many respects, to that of Theophilus, is sufficiently apparent. The burnt alum, which is clarifying, and the purified turpentine may be considered improvements; garlic and similar ingredients are still sometimes used in the preparation of drying oils, chiefly in order to furnish moisture for evaporation.

The more obvious improvements of which this direct mode of solution is susceptible are indicated in the Strassburg MS.; such as first carefully preparing the oil (on which the clearness and lightness of varnishes much depends), then throwing in the finely pulverised amber by degrees, and stirring the oil unceasingly, while exposed to heat, to prevent its carbonisation. The modes in which the solution was promoted by peculiar agents may be represented by various modern practices, such as steeping the pulverised substance in oil of rosemary before exposing it to the action of the fire; grinding it in alcohol; and then moistening it, when dry, in the oil of turpentine. The oil of amber itself has been employed with effect in the same way.* An effectual but laborious method consists in grinding the substance very finely in Venice turpentine diluted with the oil of turpentine: the amber then dissolves readily with the aid of heat, and is scarcely, if at all, discoloured. But the principal change (for, as originally practised,

* De Mayerne records a successful experiment of his own, by such means. MS. p. 48.

it was scarcely an improvement) which took place in the ancient process was, to dissolve the amber twice; by which means it was not so long exposed to a fierce heat, the second operation being easily accomplished. "Dissolve one lb. of pulverised amber in an earthen vessel on a charcoal fire. As soon as it is melted, pour it on an iron plate, and again reduce it to powder; then place it in an earthen vessel, first adding linseed oil, already boiled and prepared, with litharge; the solution is completed by the addition of oil of turpentine." * Again: "In Germany they first melted the amber, then poured it on iron plates and pulverised it: to this powder, placed in a vessel, linseed oil already prepared with litharge was added: lastly, they poured in oil of turpentine till all was dissolved." †

As the discoloration of the amber (which still takes place in this process) is the consequence of its continued exposure to great heat, various con-

* "R. succini pulverisati lb. I. qua in tegillo fictili convenienti carbonum igne colliquatur et hæc liquida massa in laminam ferream infunditur; rursus comminuitur in pulverem atque in tegillo fictili addito primum oleo lini quod cum lithargirio prius coctum et præparatum fuit et postea spiritu terebintinæ totum dissolvitur." — *Dissert. de Succino à Michaeli Alberti,* Halæ Magdeburg. 1750, p. 18.

† "In Deutschland schmeltzen sie zuerst den Bernstein gössen ihn also geschmolzen auf eiserne Bleche aus u. denn pülverten sie ihn; dieses Pulver thatten sie in einen Tiegel und hierzu Leinöl so vorher mit Glätte zugerichtet worden, endlich gössen sie auch Terpentin-oel dazu, bis alles aufgelöset sey."—*Zedler, Grosses Vollstand. Lexicon,* art. Verniss.

trivances have at different times been adopted, by means of which the portions that are first melted instantly pass off, and are thus not subjected to the action of the fire a moment longer than necessary; the following is an example. "Procure a pear-shaped vessel of copper, measuring about a foot high and six and a half inches in its widest diameter; the narrow end or neck (occupying three or four inches of the former dimension) should be nearly three inches in diameter at its truncated end. This opening should be furnished with a movable cover or stopper, pierced with holes about the size of a pea. The neck should be perforated here and there in the same manner. Fill the neck of the vessel with pieces of the lightest-coloured amber, and fasten the stopper well. Procure an iron tripod, the pan of which, being perforated in the centre, admits the inverted copper vessel, so that the neck only passes below it. Lute the vessel to the pan. Charcoal already well ignited is then placed in the pan round the sides and almost to the top of the vessel; the fire is kept up with fresh charcoal. The escape of gases, evolved by the heated amber, through the orifices of the neck, precedes the solution. The amber, as it flows down through the openings, is received in a vessel of water placed underneath. The drops, consolidating as they fall, are taken out of the water at once; the portion which flows from the upper orifices in the neck is the least

discoloured, and the purest drops are afterwards collected. This operation, like most others adopted for the preparation of varnishes and oils by means of fire, is dangerous from the inflammable nature of the gases which escape. If the pan is perforated with holes to create a draft, it is necessary to surround the neck of the copper vessel underneath with a guard of tin, so as in some measure to cut off the communication between the gases and the fire." *

The amber thus dissolved is as light in colour as it can be when prepared by means of heat alone. But in this mode, as in the method before described, that of pouring the melted amber on iron plates, the substance is greatly altered by the process: it has become brittle, and when reduced to powder is easily dissolved in the essential oil of turpentine with very little heat; it consequently requires the addition of a fixed oil to restore to it the requisite degree of toughness.

Recent investigators have found that amber and copal pulverised, and exposed to the air in that state for some time, are, in like manner, easy of solution. The change, in this case, being produced, as is supposed, by the effects of oxygen.† The easy solution of the substance is an indication that

* Fernbach, Die enkaustische Malerei, München, 1845, p. 141. See, also, Tripier-Deveaux, Traité, &c., p. 60. Compare Secrets des Arts et Métiers, Paris, 1790, tom ii. p. 733.; and Bonanni, Trattato sopra la Vernice, Bologna, 1786, p. 51.

† See Tripier-Deveaux, Traité, &c. p. 68.

its hardness and tenacity are more or less impaired; but this may be considered a uniform result of partial decomposition, by whatever means effected. In the ordinary process of dissolving amber in linseed oil, for example, the original substance is reduced to half its weight by the abstraction of the succinic acid, volatile oil, and gases, which are evolved by heat*; and, as in this case a fixed oil is simultaneously supplied, the sufficient tenacity of the varnish is at once secured. But whether the oil be added at first or subsequently, it is evident that the question of alteration can be one of degree only; to prevent it altogether, when heat is the chief agent, is impossible; it may therefore be supposed that the resinous portion of amber alone (the separation of which can be effected by alcohol or by essential oils) will still form, with a fixed oil, a firmer varnish than any prepared with the ordinary resins, and it can thus be made as light in colour.

Such products have some analogy with the "magisterium succini," one of the secrets of the medieval iatro-chemists. Records of this method may perhaps be found in very early writers; it is not even necessary to assume that its use was subsequent to the practice of distillation (the discovery or introduction of which is attributed to Arnaldus de Villa Nova, in the thirteenth century), as the same result may be obtained with naphtha.

* Dreme, Der Virniss- u. Kittmacher, &c.

Baptista Porta, a well known writer of the sixteenth century, describes the magisterium as follows. "I here add the method by which I am accustomed to extract it; the followers of Paracelsus either conceal it or are ignorant of it.* Let the amber be finely pulverised, sprinkle the powder gradually into alcohol, to be dissolved. Pour off the [partial] solution, and add more alcohol, till the remainder of the amber is dissolved, leaving the spirit to act for a month at a time. Place the different solutions in one vessel, and dissolve by [moderate] heat in the open air. The heavy oil which remains at the bottom is the magisterium of amber." †

A similar process is recorded in an English

* Libavius (*Singularia*, pars iii[a], p. 587.) remarks that Andernacus (Gonthier) had published this before Porta.

† "Apponimus modum nos quo extrahere soliti sumus; Paracelsici aut celant aut ignorant: quicquid erit ostendimus. Tundatur succinum minutissimè, tusum in aquam vitæ inspergito, ut illud solvat; solutum transfunde et novum injice quousque quod solveri potest solvatur, per mensem immorando: aquis omnibus in vas unum collatis, igni solvantur in auras. In fundo reses oleum magisterium est succini."—*Jo. Bapt. Portæ Neapolitani Magiæ Naturalis*, lib. xx. Neap. 1588, lib. x. c. 14.

Libavius (*Singularia*, pars iii[a], p. 593.) quotes a similar method recorded by the celebrated Tycho de Brahe. "Ex Cameratianis excepimus Tychonis de Brahe modum qui sequitur. Pollinem succini albi in cucurbita perfunde vini spiritu exsiccato. Clauso vase in cineribus calidis per dies quatuor digere moderato calore. Deinde destilla in balneo lento igni ne ascendat materia. In fundo erit liquor melleus suavissimus. Si augere vis, abstractum spiritum novæ materiæ infunde et age ut prius: postea junge utrumque liquorem."

medical MS. in the British Museum, written in the first half of the seventeenth century. "Hang a broad and shallow linen bagg in a great glass body of three or four gallons (whose mouth is not cut off) by three strong threads. Convey into your bagg, after it is spread and hangeth orderly, the finely scraped powder of amber at the mouth of the long pipe. Let the bagg hang almost to the bottom of the glass. Then pour into your glass three pints of well rectified spirit of wine, or as much as will in a manner cover the amber on the outside. Stop your glass well and set it on a dunghill, or in a gentle balneo for seven days and seven nights. Then shall you have a heavy oyle of Balsome that will issue out of the bagg and fall to the bottom of the spirit of wine; and other most clear, and excellent, and light oyle will float on topp of the spirit, which, with the spirit together, you must pour away by declination, leaving the heavy oyle behind. Then, with a fire of small heat, distill the spirit from the oyle; soe you have a most precious and valuable oyle wherewith Sir Walter Rawleigh had cured twelve persons of dead paulseys." *

De Mayerne employs a method similar to that of Porta in preparing a varnish. "Procure the clearest and whitest amber that can be found: the

* Liber N. Birche Pharmacopœi Norwicensis, &c., Sloane MSS. 3505. p. 203.

tincture or soluble portion should be extracted with highly rectified spirit of wine, by several infusions, in a sand bath. Throw the solution into rain-water; let it remain some days; then pour off the clear fluid, or remove it by strips of felt acting as siphons. Dry the powder which remains on white blotting paper or on chalk, and keep it in a dry place. This powder dissolves quite well in spike oil, and in due proportion makes an excellent varnish, which can be easily spread, dries quickly, and shines splendidly. The solution can be effected by means of a ladle or pan, according to the quantity, on a very moderate fire, taking care that the fire does not reach it, and always stirring with a clean iron rod. I added a little linseed oil; it is desirable that the oil should be drying, such as that which is purified in the sun with white lead, or light litharge, or that which is boiled with calcined white copperas: but with the spike oil alone the varnish answers very well." * Elsewhere,

* "Il fault avec du très pur esprit de vin extraire la teincture ou partie dissoluble de l'ambre la plus claire et blanche qu'on pourra trouver, et ce par plusieurs infusions au sable. Précipitez dans l'eau de pluye, ou simple très pure, ou, pour quelques ouvrages de prix, distillée. Laissez rasseoir par quelques jours, versez vostre liqueur claire par inclination ou bien la séparez d'avec l'ambre par des languettes de feultre et laissez seicher la poudre qui restera sur du papier blanc qui boive, ou bien sur la craye et la guardez en lieu sec. Cette poudre se dissoult fort bien en huyle d'aspic et en deue quantité faict un vernix excellent qui s'estend et se couche avec le pinceau, se seiche fort bien et reluit glorieusement. La dissolution se faict dans

however, as will be seen, he observes that the addition of a fixed oil is always to be recommended. He might have added, that the fixed oils thinned by distillation, which were sometimes employed by the Italians, are unfit for the firm compositions required in humid climates. The opinion of Rubens on the imperfections of essential-oil varnishes will be quoted in another place.

As these methods may be traced even in the modern preparation of varnishes, there seems no reason to doubt that they were employed at a time when the study of iatro-chemistry included various processes directly applicable to the arts; and it is thus intelligible how the painters who, for example, could extract the magisterium of amber, were said to study "medicine." A mode of dissolving copal (and the same method is applicable to amber) which is given by one of the best modern writers on varnishes, may be compared with the foregoing receipts. The improvement consists in exposing the substance to the vapours either of the essential oil of turpentine or spirit of

une cueillère ou poelon, selon la quantité, sur un fort petit feu, prenant soigneusement garde que le feu ne s'y mette, et remuant continuellement avec un pilon de fer bien net. J'y ai adjousté un peu d'huyle de lin, et fera fort bien si l'huyle est siccative, comme celle qui est depurée au soleil avec blanc de plomb ou celle de lytharge claire, ou celle qui est cuitte avec couperose blanche calcinée. Mais avec l'huile d'aspic seule le vernix faict fort bien." From a marginal note, it appears that this receipt was obtained from a German. De Mayerne adds, "Feci Londini Sept. 1638." (MS. p. 162.)

wine. The resin, reduced to pieces about the size of a pea, is placed in a bag of very fine texture. This is suspended within a long-necked matrass, so as to be at the distance of about an inch from the fluid. The mouth of the matrass is closed with a moist skin perforated in the centre : the vessel is then exposed to heat in a sand or water-bath. In this process spirit of wine should not boil; on the other hand, the essential oil of turpentine will be even more effectual in operation (and the operation is slow) if heated to ebullition.*

Libavius alludes to methods known to painters and others, by which amber was entirely dissolved in the oil of turpentine or in naphtha.† The mode was probably the same as that which the moderns have sometimes adopted with success for the solution of copal. It consists in using well rectified oil of turpentine which has been kept for at least a twelvemonth; the fluid has then the power of dissolving a considerable quantity of copal at a moderate heat, and, as the subsequent admixture of oil at the same temperature is always possible, the varnish is quite light.‡

The above are specimens of the various modes of

* Dreme, Der Virniss- u. Kittmacher, &c. p. 65.

† "Resolvitur et totum oleo terebinthinæ albo, quem spiritum vocamus, aut petroleo in vase clauso incoctum; idque notæ artis est apud scriniarios, pictores, librarios."—*Libav. Singul.* pars iii[a], p. 586.

‡ See a paper by Mr. Linton in the Appendix to the Sixth Report of the Commissioners on the Fine Arts.

dissolving amber (and they are also applicable to copal) from a remote period downwards. A longer list might have been given, but the principal methods are represented by some or other of the above formulæ. They have been detailed, it is repeated, rather to complete a historical view than for the purpose of supplying any important information, as, in these processes, the moderns have generally improved on the traditionary methods.*

From the numerous notes on this subject, chiefly derived from Flemish painters, which appear in the Mayerne MS., there can be no doubt that amber still merited the title of the "Vernix Germana" in the seventeenth century. It has been seen that this varnish was used in the Netherlands at an early period, to a certain extent as a vehicle for the colours; being thinned with oil as required.† That

* For examples of the best English modes in use for preparing these and other varnishes, see a valuable treatise by J. Wilson Neil, *Transactions of the Society of Arts*, vol. xlix. part ii.

† Amber and copal, however fit as ingredients for vehicles, cannot be recommended for picture varnishes. It was chiefly as a vehicle that one or the other substance was used in the Northern schools. Many persons now living remember Fairfield, a landscape painter who had studied with Jacob van Strij. The latter, as is well known, was a successful imitator of Cuyp, and, though born more than half a century later, he appears to have been well acquainted with that master's technical methods. Fairfield used copal as a vehicle. He derived the practice from Van Strij, who assured him that such had been Cuyp's ordinary medium.

this was rather a Northern than an Italian habit has been already apparent, and it will be more distinctly exemplified hereafter, in treating of the Italian practice. But it is to be remembered that the method had been originally introduced into Italy from Flanders, and it is therefore occasionally to be traced even in the practice of some of the later Italians. De Mayerne states that "the amber varnish of Venice" was that commonly used for lutes and musical instruments. Though prepared in the German mode, by a twofold solution, it seems that it was by no means light in colour: The amber, re-dissolved in a powerful drying oil, was at first turbid, but it could be clarified with pulverised brick (as recommended by Rossello), and, when duly prepared, it was kept in Italy by all vendors of colours.* The same writer observes that a similar drying varnish, thinned with clear oil, was used by Orazio Gentileschi and others; it was sparingly mixed with the colours already ground in oil, causing them to flow more or less, and giving them a remarkable gloss. It was also used

The tradition agrees with the usual hardness of surface for which Cuyp's works are remarkable.

* "Chez touts les vendeurs des couleurs en Italie on vend une huyle espaisse qu'ils appellent Huyle d'ambre de Venise. Elle est fort trouble mais ils ont un artifice ou avec des briques pilées ou avec de la crouste de pain de l'esclaircir et blanchir. Cette huile meslée sur la palette avec les couleurs déjà broyées à l'ordinaire avec l'huile de lin ou de noix les faict couler et empêche qu'elles n'entrent et s'emboyvent et les rend lustres comme verre d'un esclat excellent."—*MS.* p. 147. verso.

to "oil out" a dry surface, thereby greatly promoting the drying of the superadded colours and giving them the same qualities.*

Gentileschi, when very aged, was invited to the court of Charles I., and died in England. His daughter, Artemisia Gentileschi (an artist of whom Fuseli speaks in terms of high praise), was also much employed in this country. De Mayerne observes that she communicated the mode of preparing and

* "M. Gentileschi, excellent peintre Florentin, adjouste sur la palette une goutte seulement de vernix d'ambre venant de Venise, dont on vernit les luths, principalement à la charneure, et ce pour faire estendre le blanc et l'adoucir facilement, et faire aussi qu'il se seiche plus tost. Par ce moyen il travaille quand il veult sans attendre que les couleurs seichent tout à fait; et le vernix, quoique rouge, ne guaste point le blanc."—*MS.* p. 10.

"Ayant depuis moymesme demandé au dit M. La Nire l'usage de ce vernix, il m'a dit qu'il fault mesler deux parties d'huyle de noix fort claire avec un part du dit vernix d'ambre, et les faire bien incorporer ensemble à une chaleur fort lente; que pour s'en servir il fault passer légèrement avec une esponge fort doulce imbibée du dit vernix sur les couleurs mortes, et incontinent peindre dessus, que cela faict couler les couleurs et faict qu'elles s'entremeslent parfaitement, de sorte que quand la besogne est seiche en la refrottant du vernix le travail est aisé, à quelques heures que l'on s'y met. Il dit avoir appris cecy et en avoir eu la recepte de Signora Artemisia, fille de Gentileschi, qui peint extrêmement bien, de qui j'ai vu plusieurs grands tableaux."—Ib. p. 154. Laniere had also communicated the description of this varnish to Mrs. Carlisle; from her De Mayerne first obtained it. According to that receipt three parts of purified and bleached nut oil were to be added to one of the varnish. (MS. p. 151. verso.) For a notice of Anne Carlisle see Walpole, vol. ii. p. 300.

using the varnish to M. Lanire (Laniere)*, from whom the physician received it. The varnish, as above stated, was the ordinary German preparation.

The practice of Gentileschi, considered independently of his style, thus corresponded in a great degree with the early Flemish tradition. But it is not necessary to suppose that this amber varnish, however carefully prepared, was the only material of the kind employed even in the primitive method; and that method was by degrees variously modified in various schools. The Italians of the sixteenth century more commonly used (as an auxiliary medium) the lighter oil varnish prepared from mastic; and some of the later Flemish painters adopted a similar practice.

With respect to the original process, the Strassburg MS. perhaps contains the most satisfactory explanation of the different vehicles employed. The writer or compiler of that treatise first directs that varnish (the particular kind not being named) should be mixed with all the colours: in afterwards treating of varnishes he mentions three kinds, sandarac (or amber), mastic, and purified turpentine, dissolved in hempseed oil, linseed oil, or nut oil. The oils

* De Mayerne speaks of him as an excellent musician as well as a painter. Compare Dallaway's Walpole, vol. ii. p. 270. For an account of the Gentileschi and their paintings in England, see the same work, ib. p. 267.

appear to have been used indiscriminately; but, as regards the varnishes, it may be inferred that the clearest vehicles were mixed with the light colours, and the darker medium (which also imparted the most durable gloss and was thicker in substance) with the transparent shadows. The appearance of existing works of art agrees with these conditions: in most of the specimens of the early Flemish school the shadows are more raised than the lights, indicating the use of a thicker medium with the transparent colours; the lights have not yellowed beyond the point of an agreeable warmth, while the shadows are sometimes embrowned. The indiscriminate use of a varnish which causes the colours to flow is not to be imagined in the case of Van Eyck, as such a vehicle would not be compatible with the sharpness of his execution. At the same time it is to be remembered that the traditional amber varnish, when prepared or afterwards mixed with siccative oils, as in the practice of Gentileschi, was used as a dryer, and that this drying quality corrects in a great measure the tendency to flow.

The mastic oil-varnish, to which purified turpentine was sometimes added, was much employed by the later Flemish painters, and (as usual with their more modern processes) was introduced by them into this country. The necessity of employing the oleo-resinous medium in such climates as those of England and Holland was thus still recognised,

and, as will be shown hereafter, a proportion of oil was recommended even in varnishes for finished pictures.

The following receipts exemplify the use of the oleo-resinous medium during the 17th century. They appear in a modern manuscript without a name. The writer states that he copied them from a collection of memorandums containing successive accounts of the methods of painters who had practised in England from the time of Vandyck to that of Kneller; but as he adds that he had lost sight of the original MS., and as the name even of the transcriber himself is unknown, the description must rest on its own merits.

"To make Vandyck's drying oil.—Take an oz. and half, or two oz. is better, of white lead, and a pint of nut oil; set the oil upon the fire in a large earthen vessel; put in the lead by degrees, as the oil simmers very slowly over the fire till the whole is dissolved [diffused]." The oil was then clarified by straining and by repose. The writer adds: "This oil should be used fresh. Vandyck . . . always had it prepared in his own house, and never kept it by him more than a month; after that time it begins to lose its good qualities: it is believed that Cornelius Jansen, as well as Vandyck, used this drying oil." The next extract is: "To make Vandyck's mastic varnish.—Take 1 lb. of gum mastic, carefully picked; powder it and set

it in an earthen vessel with 2 lb. of spirit of turpentine. Set this in a sand heat, or any other heat that is less than will make the spirit boil: let it remain (shaking it well continually) till the gum is dissolved. Take it from the fire and let it stand till the contents are cold. The varnish is then to be poured out, and separated from any little foulness it may contain. The best way is to make a quantity of this varnish at a time, and keep it in bottles closely stopped, exposed as much as possible to the heat of the sun. This will make it clear, and improve the colours in proportion to the length of time it is kept. Take 1 lb. of this varnish and half a pint of the drying oil; shake them well together; put them, in a bottle, to simmer on the fire for a quarter of an hour, when the mixture will be complete. But if it should curdle as it cooks, it must be set on the fire again, and simmered until, when cooling, it does not curdle, but appears like a white jelly." Elsewhere: "He [Vandyck] kept all his colours dry, except white, which was ground with nut oil, and kept under water. His colours were tempered as he used them with the oil and varnish [above described]." Of Sir Peter Lely it is related that "his colours, like Vandyck's, were ground in water and kept dry, except the white, which was ground first in water, then with nut oil, and kept in water for use." The transcriber further observes: "It was mentioned in the same manuscript that [Daniel] Seghers, the flower-

painter, used the true Strassburg turpentine boiled with nut oil for his vehicle."*

None of the above circumstances, nor any others purporting to be quoted from the lost manuscript, are at all improbable; on the contrary, they are generally borne out by the known practice of the Continental schools during the corresponding period.† De Mayerne frequently records the directions of painters that varnishes were "to be mixed on the palette with the colours." ‡

The numerous Flemish and Dutch painters who crossed the Alps imported from time to time the methods of the Italians, and combined them with their own. As the merit of Van Eyck had recommended his process to all, so the excellence of the great Italian masters led, in turn, to the adoption of theirs. This reaction began early. Luigi Guicciardini (perhaps copying Vasari) remarks that Schoreel had introduced in Antwerp some of the Italian methods. There are, indeed, numerous

* The author obtained the MS. referred to from Mr. H. Bohn, of York Street, who purchased it at a sale at Messrs. Sotheby's in May, 1845.

† A document to be given hereafter differs slightly from the above account in respect to the oil used by Vandyck; but his predilections in such particulars may have varied at different times.

‡ "Alors vostre vernix sera faict, que guarderez soigneusement; et pour vernir, et pour mesler sur la palette avec les couleurs."—*MS.* p. 152. The description is headed "Vernix fort blanc de M. Feltz. Decemb. 1641."

examples of Flemish and Dutch pictures which are national only in their taste, since their technical methods correspond with those of some one or other of the Italian schools. It would be a mistake, however, to suppose that the delicate execution of the artists of the Netherlands is incompatible with an oleo-resinous vehicle. Their most minute finish, as such, is not superior to Van Eyck's; and with respect to the possibility of combining the sharpest precision with the employment of such a medium, it is sufficient to remark that Wilkie's Blind Fiddler was painted throughout with *meguilp* (or drying oil and mastic varnish), as many can attest who saw the progress of that perfect production. The works of some living artists who have uniformly painted with copal oil-varnish will likewise be remembered.

The dryer most commonly used in the Flemish school was white copperas. Two documents of the fifteenth century, relating to that school, which have been quoted, are conclusive as to the early use of this ingredient. The following extracts from the Mayerne MS. show that it was still as common in the seventeenth century. "Colours which do not [of themselves] dry, will dry by adding to them verdigris, white copperas, or crystalline glass*, prepared by extinction in cold water and then very

* The use of a certain kind of glass, in a finely pulverised state, as a dryer, was common in Italy. The mode of preparing it will be more fully described in the second volume.

finely ground."* Elsewhere: "Drying oil more siccative than any other.—Burn white copperas on a redhot shovel, till, after being melted, it dries and becomes a powder. To one lb. of linseed oil add two oz. of this calcined copperas. Boil on a slow fire for an hour, always stirring; then strain. Thus prepared, the oil is not so dark as it would be with litharge, and dries in two or three hours."† Again: "Communication from a Flemish painter at Lord Newport's, 16th Sept. 1633. A powerful drying oil.—Dry or half-calcine white copperas on a fire shovel, and put a small quantity of this with linseed oil. Boil, strain, and keep for use. The painter told me that this oil will dry in two hours, and that there is nothing better for drying lake quickly: the colour becomes very brilliant, and does not fade. The same oil may even be mixed with any other colours that are slow of drying."‡ Else-

* "Les couleurs qui ne seichent point le feront en y adjoustant le vert de gris, ou la couperose blanche, ou du verre chrystalline pulverisé impalpablement, ou calciné par extinction dans l'eau froide, seiché, et broyé en poudre très subtile."—*MS.* p. 18.

† "Huile plus siccative que toutes les aultres. – R. couperose blanche tant que vous voudrez, bruslez-la sur une poisle rouge tant qu'après avoir esté fondue et avoir boulli elle se seiche et se divise en poudre. R. huyle de lin lb. j. couperose ainsi calcinée ℥ij. cuisez à lent feu environ une heure remuant tousjours, coulez votre huyle qui n'est pas si noire qu' avec la lytharge et seiche promptement en deux ou trois heures."—Ib. p. 21.

‡ "Discours d'un peintre Flamand chez my Lord Newport, 16 Sept. 1633. Huyle fort siccative. — Faites bouillir du blanc ℗ desseiché ou à demy calciné sur un poesle de feu et d'iceluy mettez une petite quantité dans l'huyle de lin. Faites boullir et

where: "The oils fit for making varnishes are nut oil and linseed oil. These are rendered drying with litharge, or, which is better, with calcined white copperas," &c.* The use of this material prepared in the same manner is recommended in Smith's *Art of Painting in Oyl*, published at a time (1687)† when Flemish methods were much adopted in this country. Copperas is rarer in Italian formulæ, and in the following instance it is alluded to as a German material. "To render oil very drying, some are accustomed to boil with it, together with litharge, a mineral or species of vitriol found in Germany, called copperas, reduced to a very fine powder." ‡ It is to be observed, that the use of lead, in the form of white lead, is the most ancient of the recorded dryers, since it

coulez; guardez.... Le peintre m'a dit que cette huyle seiche en deux heures, et que pour faire seicher la lacque vistement il n'y a rien de meilleur. La couleur se rend plus vive et ne se guaste nullement. De mesme elle se peult mesler sur la palette avec toutes les aultres couleurs qui seichent malaisément."—*MS.* p. 161.

* "Les huyles propres à faire vernix sont ceulx de noix et de lin, lesquels, seules rendues siccatives avec le litharge ou (qui mieux est) avec la couperose blanche calcinée, se seichent sur la besogne et peuvent endurer quelque eau que ce soit. Si la dissolution des resines est faicte avec ces huyles les vernix en seront plus beaux et auront plus de corps."—Ib. p. 47. verso.

† The first edition has the date 1676.

‡ "Per ottenere anche olio molto seccante sogliono alcuni farvi bollire ridotto in sottilissima polvere insieme con il litargirio un minerale o specie di vitriolo che nasce in Germania chiamato chuperosa," &c.—*L'Epitome Cosmografica del Padre Vinc. Coronelli*, Colonia, 1693, p. 99.

occurs in a copy of Eraclius transcribed probably not later than the year 1400. The circumstance of white copperas being recommended in the Strassburg MS., and in that of De Ketham, in the fifteenth century, therefore renders it probable that the use of the latter dryer was one of Van Eyck's improvements. This subject will be further illustrated in another chapter.

The diluents employed with varnishes and vehicles were, naphtha, the essential oil of turpentine, and spike oil. Each of these has been incidentally mentioned in the foregoing extracts; their use immediately after the date of the improved oil painting, when thick vehicles were still employed, is perhaps to be inferred from the extreme precision of execution in the works of Van Eyck and his followers. There is no approach to this in the partial oil painting sometimes observable in the works of the tempera painters: in such examples the vehicle is undiluted, and the [decorative] forms executed with it are always blunt at the edges. The drying property of the essential oils is in proportion to their rectification*; and the lasting purity of their tint may partly depend on the same

* De Mayerne observes of the essential oil of turpentine: "tant plus elle est distillée tant plus elle est siccative et claire comme eau de roche." Dreme suggests that the rectification of this oil may be tested by mixing it with white already ground in linseed oil. If, after half an hour, the essential oil rises above the diluted pigment, it is duly rectified; if it mixes, it is not sufficiently pure.

circumstance. De Saussure, whose careful experiments with the oils are well known, speaking of their coloration, says: "It is to be observed that oxygen produced two opposite effects; it deprived the fixed oils of colour and coloured the volatile oils." He states that the oil of turpentine acquired a brown hue after having been long exposed to the air; and that spike oil began to change even after a few days.* This observation need not create any distrust respecting the useful diluents in question. They have been employed by the best painters; and evaporating as they do, when well rectified, the greater or less time in which they become discoloured by the absorption of oxygen can be of little consequence. Those, however, who are desirous of employing the purest and most unchangeable essential oil can easily procure rectified naphtha, which happens to have been the earliest in use for the purposes of painting.†

In diluting thick oleo-resinous compositions with essential oils, it is found that the rapid evaporation of the volatile ingredient, when carefully prepared, requires that it should be frequently renewed; hence the object proposed may have been assisted,

* Annales de Chimie, vol. xlix. p. 231.

† "Le naphte rectifié d'Amiano a sur l'air une action beaucoup plus faible, que toutes les huiles précédentes. . . . Le naphte avait, après l'absorption [au bout de six ans], toute sa transparence et sa blancheur; mais il avait déposé sur les parois du récipient un léger enduit solide de couleur jaune."—Ib. p. 238.

as the Byzantine MS. directs, by the addition of a purified, but unboiled, fixed oil.

The foregoing details and references may serve to clear up some of the uncertainty which has existed respecting the early practice of oil painting. It cannot be supposed that the records of contemporary methods in Flanders and its neighbourhood were altogether different from those of the scholars and followers of Van Eyck; it may be more reasonably concluded that the practice introduced by them must have been eagerly learned by many, as soon as it was known to a few. Even those writers who (erroneously) assume that the process was long kept secret still admit that it was unreservedly communicated at last; and there must have been a time, before the details of the method were partially changed to suit another climate and other tastes, when the mere materials and general mode were universally familiar. Perhaps various German or Flemish manuscripts on oil painting (belonging to the middle or latter half of the fifteenth century), yet to be brought to light, describe some portion or other of the method of Van Eyck. Two documents only of this kind, from which extracts have been given, have hitherto been found; but, supported as they are by corroborating evidence, they are conclusive as to the chief materials employed, and even as to the leading peculiarities of the process. They sufficiently establish the fact that an oil varnish was mixed in varied proportions with all the colours.

The use of oleo-resinous vehicles by the early Flemish painters having been sufficiently proved by records, by the appearance of the works of those painters, by the testimony of the historians of art, and by the subsequent practice of the school, it was desirable to ascertain what were the principal resinous ingredients employed: (for the question respecting the oils relates less to their varieties, which are very limited, than to the modes of purifying the oils themselves). In consulting any modern treatise on the technical part of painting, the multitude of substances — for example, under the head of resins — which are necessarily brought to view and described, might seem to render it hopeless to determine what materials of the kind were chiefly in use among the Flemish painters. A comparison of documents extending through several centuries enables us, however, to define the principal substances of this description which were employed in oil varnishes by the painters of the North. These substances consisted of amber, and perhaps copal, sandarac (the ordinary representative of both), mastic, and purified turpentine; the latter being sometimes reduced to a brittle state by a process before described. Thus they might still be classed (as some of these materials were, in the English records of the 13th and 14th centuries) under the general designation of "red and white varnish;" the former serving for the dark colours and shadows, the latter for brighter tints.

Purified turpentine — the white resin, properly

so called — was commonly employed both as an auxiliary solvent, and for the purpose of adding gloss to varnishes; but it was also sometimes used as the chief basis of a light oleo-resinous vehicle.

The comparative durability of resinous substances when dissolved in essential oils, is scarcely a criterion of their solidity when those substances are dissolved in a fixed oil. They then acquire a firmness far greater than unprepared oil alone, or a resinous solution in essences can possess, and communicate that firmness to the pigments with which they are, in due proportions, mixed.*

* From the facility with which it is dissolved, the concrete turpentine is considered the weakest of the resins; yet this substance, if well incorporated with a drying oil, is extremely durable, even in the open air. The following account of such a varnish (composed of the ordinary materials for common purposes), in the first edition of Smith's *Art of Painting*, 1676, p. 79., is not exaggerated. "Some improvements in painting, to resist weather and preserve timber or wooden works from rotting.—Take the hardest rosin you can get, clarifie it well, to which rosin add linseed oyl so much as you find by experience to be sufficient. Let them be well melted and incorporated together on the fire. Then take either umber or red lead (these being extraordinary drying colours) first ground fine, which put into the oyl and rosin. This is a most excellent thing to preserve timber; it lyeth like the China varnish, and will endure ten times as long as other painting (if rightly wrought). This is a most excellent way to preserve the border boards in gardens and any other thing that we would have last long in wet and moisture. The best way to make the varnish (or colour) for this purpose is to put no more oyl to the rosin than what shall just serve to toughen it. . . . The best way to lay this colour on is to heat it hot before you work it, which will make it close the firmer to the wood."

The inspissated or half-resinous oil which was described in a former chapter, thinned or not, as required, may also be considered to represent an oleo-resinous vehicle, and is even well adapted for some purposes.*

The principal methods that have been adopted since the time of Van Eyck, for purifying the oils used in painting, will now be described.

* "This fat drying oyl shall not only make your colours dry sooner than plain oyl, but it shall also add a beauty and lustre to the colour; so that they shall dry with a gloss, as if they had been varnished over."—*Smith, Art of Painting*, 1687, p. 39. It has been before observed, that this thickened oil was sometimes used by the Flemish landscape-painters in shadows.

ADDITIONAL NOTE.

Hoffman (*Observationum physico-chymicarum selectiorum Libri III*, Hal. 1722, p. 223.) gives the following description of an experiment with amber. "I put some pulverised amber in a glass vessel, pouring on it two parts of almond oil; I then placed the vessel in a Papin's digester, carefully constructed, which was one third full of water. Having fastened on the cover very closely, I exposed this for an hour and more to a moderate fire. When the digester was cooled I found the amber dissolved to a gelatinous and pellucid mass (in gelatiniformem et pellucidam massam colliquatum), with a little oil floating above it. From this experiment we clearly learn that expressed oils have a peculiar power on the texture and cohesiveness of amber," &c.

The effect of oil, at a certain temperature, in penetrating "the minute pores of the amber" (as Hoffman elsewhere writes), is still more strikingly exemplified in an invention, or perhaps an old method revived, by Christian Porschinen of Königsberg, at the close of the seventeenth century (June, 1691). He succeeded in rendering amber colourless, so as to employ it as a substitute for magnifying glasses. Zedler (*Grosses vollständiges Univ. Lexicon,* art. Bernsteinerner Brenn-Spiegel) describes the process. The manufacturer placed the amber, already formed and polished for the intended use, in linseed oil exposed to a moderate fire, and sufferd it to remain till it had entirely lost its yellow colour, and had become quite clear and transparent. Zedler states that lenses so prepared are more powerful than those made of glass in igniting gunpowder (welche viel schneller in Brennen und Pulver-anzünden sind als die gläsernen).

The same process was afterwards adopted for clarifying amber beads, so as to render them transparent like glass. The method is probably most successful when the substance is not very thick. For a further account of this invention Zedler refers to Hen. von Sanden, *Disp. de Succino Electricorum principe,* Königsberg, 1714. Dreme (*Der Virniss- und Kittmacher*) alludes to similar methods. "Amber boiled in linseed oil is softened so that it may be bent and compressed: opaque or clouded amber by this process becomes light and transparent. The oil should be heated gradually, otherwise the pieces of amber are liable to crack." Such modes of clarifying amber might be employed with effect, preparatory to its solution by some of the means before indicated.

CHAP. X.

PREPARATION OF OILS.

The perfection of varnishes of the description referred to in the last chapter greatly depends on the preparation of the oils in which the resins are dissolved; and the best oil for a varnish, or for an oleo-resinous vehicle, is also generally the fittest for using alone as a medium for painting. On this account, the line of separation which has been hitherto observed between the Flemish and Italian practice may here be set aside, since the most carefully prepared oils are required in every case. Examples will therefore be taken, as they may appear worthy of notice, from either school. In conformity with the plan hitherto adopted, scientific descriptions will be quoted as little as possible, the chief object being to present a view of the processes which were common in the best periods of art.

The drying oils mentioned in the records of painting during those periods are, linseed, hempseed, walnut, and poppy oils. Hempseed oil appears rarely; and poppy oil, as a vehicle for painting, was introduced latest.

The common mode of expressing linseed oil, after the seed has undergone a certain preparation by heat (in order to obtain a more copious oleaginous extract), was in use some centuries before the time of Van Eyck*; but in periods of a more refined practice in art the oil was "cold drawn," chiefly with a view to avoid its discoloration.† The extreme care with which nut oil was sometimes extracted is apparent from Leonardo da Vinci's description of his own method: a similar practice seems to have been familiar in the Northern schools during the seventeenth century.

Leonardo observes: "Walnuts are covered with a husk or rind; if you do not remove this when you extract oil from them, [the colouring matter of] this skin becomes separated from the oil and rises to the surface of the picture, and this is what causes the alteration of pictures."‡ It is not

* See Theophilus, l. i. c. 20.

† Birelli (*Secreti*, Firenze, 1601, p. 541.) begins a receipt: "R. Olio di lino (sine igne) una parte," &c. De Mayerne, speaking of nut oil, says: "Si elle est tirée sans feu elle sera beaucoup meilleur." (MS. p. 151. verso.) In the Venetian MS. we read: "R. dello seme de chanapa e fane quantitad e secca al sol-ombra," &c.

‡ "Le noci sono fasciate da una certa bucciolina che tiene della natura del mallo: se tu non le spogli quando ne fai l'olio, quel mallo si parte dall'olio, e viene in sulla superficie della pittura, e questo è quello che la fa cambiare." — *Amoretti, Memorie storiche, &c., di Leonardo da Vinci*, Milano, 1804, p. 149.

necessary to adopt this explanation of the yellowing of oils even from so high an authority, but we have here a plain proof that the first oil painters were by no means indifferent to this defect in the vehicle. Modern writers have sometimes expressed the opinion, that, as the alteration of oils is unavoidable, it is better to use them at first in the coloured state which they must ultimately attain. That this was not the opinion of earlier investigators will be abundantly proved in this chapter. The best painters seem to have left nothing undone to render oils as colourless as possible before they were used, and to prevent their rising in pictures and forming what is called a horny surface. Leonardo da Vinci elsewhere gives directions for preparing nut oil: —

"Select the finest walnuts: take them from their shell; soak them in a glass vessel, in clear water, till you can remove the rind. Then replace the substance of the nut in clear water, changing the latter as often as it becomes turbid, six, or even eight times. After some time the nuts, on being stirred, separate, and become decomposed of themselves, forming a solution like milk. Expose this in plates in the open air; the oil will float on the the surface. In order to separate it in a perfectly pure state, take cotton wicks," &c. Then follow directions to use these as siphons, in the well known mode. "All oils," he concludes, "are, in

themselves, clear; it is the mode of extraction which alters them." *

The following note occurs in the MS. of De Mayerne. "M. Lanyre [Laniere] has caused some old, but not rancid, walnuts to be freed from their yellow rind with much trouble; from the nut, so prepared, he has had some very light and clear oil extracted. I believe that by soaking the nuts in tepid or warm water the pellicle could be easily removed," &c.†

* "Scegli le noci più belle, cavale del guscio, mettile a molle nell' acqua limpida in vaso di vetro, sinchè possi levarne la buccia: remettile quindi in acqua pura, e cangiala ogni volta che la vedi intorbidarsi, per sei e anche otto volte. Dopo qualche tempo le noci, movendole, si disfanno e stempransi formando quasi una lattata. Mettile in piatti all' aria aperta; e vedrai l' olio galleggiare alla superficie. Per cavarlo purissimo e netto prendi stoppini di bambagia che da un capo stiano nell' olio, e dall' altro pendano fuori del piatto, ed entrino in una caraffa, due dita sotto la superficie dell' olio ch' è nel piatto. A poco a poco l' olio filtrandosi per lo stoppino cadrà limpidissimo nella caraffa, e la feccia resterà nel piatto. Tutti gli olj in se stessi son limpidi, ma gli altera la maniera d' estrarli." — *Amoretti, Memorie,* &c. p. 149. Compare J. B. Venturi, *Essai sur les Ouvrages Physico-Mathématiques de Léonard de Vinci,* Paris, 1797, p. 30.

† "M. Lanyre a faict esplucher des noix vieilles, non rancées pourtant, et en oster toute la peau jaune avec beaucoup de peine, et de la noix a faict exprimer de l'huile très belle, très blanche, et très claire. Je crois qu'en trempant les noix dans de l'eau tiède ou un peu plus, ceste pellicule s'enlevera aisement après quoy seichez les noix au four après le pain osté ou dans l'estuve, et exprimez l'huile."— *MS.* p. 138. verso. The method of peeling is still occasionally practised in Italy.

In Leonardo's method the oil was at once cleansed from extraneous matter, so that scarcely any subsequent treatment was necessary. In general, however, a further purification is required.

No oil is fit for a varnish or for a vehicle, intended to be durably brilliant or durably light, which has not been thoroughly freed from its mucilage. Those who have advocated other methods of painting (such as encaustic painting), on account of the darkening of oils, have hinted that the presence of mucilage (to which that effect is partly attributable) may be essential either to the durability or the siccative quality of the oil.* That this is a mistake may be concluded from the fact that painters, from first to last, have been careful to obtain a vehicle effectually purified from such ingredients.

One of the modes in which oil may be deprived of its mucilage is by mere repose; but the complete defecation by this means requires considerable time. The vessel in which the oil is kept should be carefully stopped, to prevent the thickening of the fluid (unless that quality be desired), and the result will be accelerated by moderate warmth. Reynolds looked upon a present of some very old nut oil as a valuable gift.† Lodovico Carracci, in thanking a

* Montabert, Traité complet, &c. tome ix. p. 96. Compare Fabbroni, Antichità, Vantaggi, &c., della Pittura Encausta. Roma, 1797.

† Northcote's Life of Reynolds, vol. i. p. 118.

friend who had sent him some "precious oil,"* probably alluded to the purity which it had acquired by age. De Ketham, in the MS. before quoted, recommends "linseed or nut oil, the older the better." The Strassburg MS. speaks of old nut and hempseed oil. Valentine Boltzen mentions "pure old hempseed oil." De Mayerne, after quoting the somewhat singular opinion of Abraham Latombe, that nut oil dries better than that of linseed, quaintly adds, in a marginal note, "tant plus vieille, tant meilleur;" and Scheffer, speaking of linseed oil, observes, in equivalent words, "quantò vetustius, tantò solet esse melius."†

This effect of time on the quality of oils may be anticipated in a few months, or even weeks. The directions for accomplishing the purification are innumerable, and it will only be possible to refer to them in classes, giving fuller details of those which appear to be the most innocent and effectual.

The quantity of mucilage always abounding in newly expressed oils may vary in different kinds of oils. As regards its effect, it is to be observed, that its presence tends to augment the discoloration of oils when subjected to great heat. Other tests are no less conclusive. If a small quantity of concentrated sulphuric acid be introduced, drop

* Raccolta di Lettere sulla Pitture, &c., Milano, 1822, vol. i. p. 276.

† Graphice, Norimb. 1669, p. 179.

by drop, into a phial of unclarified oil (in the proportion of 2 parts to 100 of oil), the phial being well shaken, the mucilage soon becomes carbonised: the blackish particles subside, and the oil remains perfectly clear and fluid. Warm water shaken with it assists, for some hours, the separation of the heterogeneous particles, and the excess of acid in the oil combines with the water. An oil so purified, though quite unfit for the purposes of painting, is in the best state for burning in lamps. In its natural condition it produces a turbid flame and thick smoke; when deprived of its mucilage it burns clearly and without the least smoke.* Dioscorides (whose writings were familiar to the early painters or to their teachers), in a passage before quoted, observes that poppy oil, when deprived of its mucilage by exposure to the sun, burns with a clear flame. Thus, if it be true that the action of heat, or of violent agents that are equivalent to it, represents the ultimate effects of atmospheric influences, a mucilaginous oil is more likely to become dark than a purified one.†

Of the more direct methods employed by the

* Dreme, Der Virniss- u. Kittmacher, &c. p. 19. Compare Annales des Arts et Manuf. tom. ix. p. 267., tom. vi. p. 68., tom. v. p. 273.

† "It is indeed some sort of criterion of the durability and changes of colour in pigments, that time and fire produce similar effects thereon: thus if fire deepen any colour, so will time," &c. — *Field, Chromatography*, London, 1835, p. 44.

early painters to effect this separation, the most ancient is that of exposing the oil to the sun; the mucilaginous parts, which are more or less aqueous, are thus either precipitated or evaporated, while the oil becomes nearly colourless: examples have been already given. The other modes which have been recorded may be generally classed as follows: washing, filtration, and the admixture of ingredients mechanically and chemically purifying. As these means have often been employed together, it will not be possible to exemplify them in distinct order; nor is this of much importance. The method of washing, which is undoubtedly the best, though the most tedious, is at once the earliest in the history of modern art, and the most approved by recent authorities.

In the first chapter of this work a mode of purifying oil was noticed as having been taught by the Gesuati, the friends of Perugino. In the compendium of the "Padre Gesuato" before quoted, the method is thus described. "Take fine clear linseed oil of a golden colour in the quantity required; put it in a horn or in a horn-shaped [cone-shaped] glass, having an orifice with a stopper at the point below. Add water, and with a stick stir and mix the oil and water effectually; then, after allowing the fluids to settle, unstop the orifice and let the water run off. Add more, and repeat the operation seven or eight times, or till you find that the water, at its exit, is as clear as when

it was poured in: thus the oil is purified. It is then to be kept in glass bottles for use. . . . . Observe that, whenever you find oil mentioned, this purified oil is meant."*

This mode of cleansing oil is described by a Portuguese writer. It was shown in a former chapter, that the early Portuguese school of painting was long influenced by that of Flanders, and the process here noticed may have been derived from Flemish authorities. A similar method, it will appear, was in use in the Netherlands in the seventeenth century. As it was taught by the monks at an early period, its adoption in all schools is easily accounted for.

* "Piglia oglio fatto di semelino bello e chiaro del color croceo ciò è color d' oro e quella quantità che a te pare e mettilo in un corno di vetro over di bue, e che habbia un buchetto in fondo, e metteci sopra acqua fresca, e con un legnetto lavalo bene mesticandolo sottosopra; poi lassalo alquanto posare et apri il buco di sotto e lassa andar via l' acqua, e a questo modo farvi per sette o otto volte, overo tante volte che l' acqua venghi fuora chiara si come tu ce la metti, et a questo modo si purifica il detto oglio; poi conservalo in ampolla di vetro alli tuoi bisogni.... Nota che quando tu sentirai nominare oglio intendi di questo purificato."— *Segreti aggiunti et non mai posti in luce per fino a quì..... havuti da un reverendo Padre Jesuato pratico ed eccellente.* Printed at the end of the *Secreti di Don Alessio.* Lucca, 1557.

In the above operation, several hours are required for the fluids to separate. The oil is directed to be kept in a glass vessel, in order that light and warmth may tend further to bleach it and promote the evaporation of the aqueous particles.

" To purify Linseed Oil for White and Blues. — Take a vessel having an orifice at the bottom, which may be stopped and unstopped. Throw in the oil mixed with spring water, and, after stirring well, let the mixture settle, till the oil remains uppermost: then gently remove the stopper, letting out the water, and, as soon as the oil begins to come out, stop the orifice. Do this three or four times; the oil will be very clear and fit for use."*

In a recent French work on varnishes a similar method on a large scale is described, and, without reference to the old practice, is recommended on chemical principles. The author observes: "By thus removing the fermentable particles which the oil contained, its affinity for oxygen has been reduced; a longer duration, a longer resistance to the atmosphere, is secured for it."† The method adverted to is commonly employed by the manufacturers of choice varnishes, but, as it may not be familiar to painters, a description of a complete

* " Para purificar olio de linhaça pera o Aluayade et Azuis.— Tomay hum vazo que seja furado por baixo com hum torno delicado que se possa tapar et destapar, botailhe o olio com agoa da fonte, et batey isto muito bem et deixay asentar o olio quẽ fique por cima como azeite, depois levemente tiray o torno que saya a agoa, et tanto que comessar a sayr o olio fechay, et isto fazey tres ou quatro vezes et ficarã o olio muito purificado, et que se possa uzar muito bem." —*Philippe Nunez, Arte da Pintura,* em Lisboa, anno 1615, p. 58.

† Tripier-Deveaux, Traité, &c. p. 134.

process of the kind is here given from another source.* In this instance again, the writer professes to be guided by chemical principles only; the accidental coincidence with the early practice, therefore, doubly recommends the method.

In this process wooden vessels or churns are used, each having in the centre a vertical axis with paddles: this is made to revolve rapidly. The oil and water, to which a little common salt is added, are thus incorporated. After an hour the mixed fluids are poured into a trough where they are suffered to remain twenty-four hours. The separated oil is then drawn off by an opening in the side; a sufficient quantity of water being always provided in the trough to raise the oil to the proper level. The first mentioned vessel or churn is, meanwhile, cleansed with warm water, which, mixed with the remainder of the oil, is also thrown into the trough, and is to be allowed for as regards the level. The oil, as it is drawn off, is transferred to the churn, when the first operation is repeated with fresh water. A considerable sediment is found in the trough: the small quantity of oil remaining with it is carefully taken up and thrown into the churn. The newly mixed oil and water are again thrown into the clean trough, and, after the same lapse of time as before, the oil is again removed to the churn. The washing is re-

* Dreme, Der Virniss- u. Kittmacher, &c.

peated three or four times; a very impure oil may require to be thus washed six times.

The process on a small scale is thus described by the same writer. Half fill a glass bottle with pure rain water: add half the quantity of oil, some well-washed and sifted sand, and some torrefied common salt. The bottle being stopped, the whole is to be shaken for a quarter of an hour, and then suffered to settle. As soon as the oil is separated from the water the ingredients should be again agitated, and again allowed to separate. This is to be repeated till the oil has entirely lost its dark colour. It should then be separated from the water by means of a siphon or other contrivance, and poured into another bottle. Fresh sand and water, in the same quantities as before, are to be added; the whole being shaken and allowed to settle as before, six times. The oil is then again to be transferred to another bottle. This series of operations should be repeated at least four times. Every time, a quantity of mucilage separates itself, subsiding in the bottle together with the sand. In the separation of the oil from the water during this purification it is not necessary to be very exact, as the oil is to be mixed with water afresh; but in the last operation it requires to be separated more carefully, and the salt should be omitted in the last washing. The author adds: "No method is fitter than this for refining oil. The most turbid oil is thus reduced to the greatest degree of purity; all mucilage is

separated from it, and its colour becomes so light and clear that it is fit for the manufacture of a varnish of the choicest kind."*

Experience shows that the addition of white sand and salt† accelerates the effect here described, but the washing with water alone is sufficient, in due time, to produce the same result. That the method of the Gesuati, practised as it was in various schools, was that of the early oil painters generally, there can hardly be a question: the expression in the receipt before quoted, "whenever you find oil mentioned, this purified oil is meant," may be considered conclusive on this point.

The oil thus prepared is in a perfectly fluid state; its drying quality, far from being impaired, is rather increased by the operation; and, when entirely freed from water (by exposure to the sun or by other means), it may be used with advantage as a vehicle for painting. But, in order to render it fit for the preparation of a varnish, it is necessary that it should itself acquire, to a certain extent, the nature of a varnish. The following is a description of the careful method practised and recommended by the author before quoted:—

The oil, purified by means of water in the

* Dreme, Der Virniss- u. Kittmacher, &c. p. 23.

† "La solution aqueuse de sel marin est un des moyens les plus anciennement employés; il agit en donnant à l'eau une gravité qui détermine plus facilement sa separation d'avec l'huile."—*Annales des Arts et Manuf.* tom. ix. p. 267.

manner above explained, was poured into glass troughs placed in the sun. Each was filled to one third of its capacity with water; another third was occupied by the oil; a similar space remained between the oil and a glass cover, the cover effectually excluding dust but admitting air. Notwithstanding the previous purification, the clean water, after a few days, became turbid, and a sediment again was formed. After a week the oil was removed, the vessel was cleansed, and the operation was repeated. The more serene the weather, the more perceptible was the sediment in the vessel. The same process was repeated, from week to week, six times; sometimes longer, according to the state of the oil. After the third week it was generally observed that the oil was gradually changing to the state of a varnish: the change in the consistence of the fluid then rapidly increased. When the oil had attained a certain consistence, the separation of the mucilage ceased. In removing the oil from the water for the last time, great care was taken that no water should be taken up with it. The oil that remained was separated by subsidence, in bottles; precautions were observed that no rain should penetrate into the bottles; to prevent this they were protected with funnel-shaped covers.

"Thus," says the writer from whom this description is taken, "I obtained a varnish [a thickened oil] colourless as water, and brighter than

the oils which are boiled. I have also observed that it undergoes no change. I very much doubt," he continues, "whether it is possible, in any other way, to prepare a better varnish, or one that is fitter for the solution of resins; not only because an oil so prepared communicates no colour to them, but because it is fluid to such a degree, that a varnish composed with it may be easily spread; whereas, with the boiled oils, the resin becomes more or less coloured, and, when spread as a varnish, leaves inequalities which are difficult to remove." *

Such processes are worthy of the patience of the old painters, and, whether recommendable or not in all their refinements, deserve to be recorded. It is stated that the same results were obtained in winter by suspending bottles, filled with the purified (washed) oil, in ovens moderately heated, the bottles being changed and cleansed as before. Such are the oils in which copal and amber should be dissolved; the varnishes will then be as little coloured as possible.

It has been shown that the washing process was familiar at a very early period. In like manner, the ingredients of salt and sand, recommended in the foregoing extracts, also occur in descriptions of processes derived from good authorities in the Flemish school, at the period when that school

* Dreme, p. 71.

was in its most flourishing state. The addition of salt, for example, is mentioned in a receipt obtained by De Mayerne from "M. Soreau, en Allemand Sorg" (probably the scholar of David Teniers).* Salt might be chemically injurious to some colours, but, as all traces of it may be ultimately removed from the fluid by washing, there appears to be no risk whatever in its use: Sorg, it will be observed, adds other cleansing ingredients.

"*Linseed or nut oil bleached, and well cleansed.* —Take rain water and dissolve salt in it: mix this with your oil, and wash the oil by shaking it for a considerable time, and frequently, during two or three days. A glass bottle with a stopper below is best adapted for the operation. [After the oil is separated from the water] draw off the salt water, and add more; repeating the process five or six times. Afterwards wash the oil three or four times with fresh rain water. In order to cleanse it well, bread crumbs should be added: this ingredient,

* The date of this particular notice in the physician's MS. is August, 1637: at that time Hendrik Martenz, called Zorgh or Sorg (a surname which he inherited from his father), was but sixteen years old according to the biographers, who place his birth in 1621. Houbraken, who gives his portrait, says it was taken in 1645, when Sorg was thirty-four. But the same writer afterwards states that this painter died in his 61st year, in 1682. Thus, according to the portrait he was born in 1611; according to the latter statement in 1621. The portrait represents a man of about thirty-five. The question is so far interesting as the method of purifying oil above described may have been derived from David Teniers.

passing through the oil, forms a sediment, carrying with it whatever impurities may remain. Afterwards separate your oil, and keep it in a well stopped bottle: it will be as clear as water." *

Another Flemish painter, "M. Adam, demeurant à Coolman street," was in the habit of purifying his oil with the last named ingredient and water only. "Procure a wide-mouthed vessel in which put water and linseed oil, the latter being already well clarified by repose. Shake them together, and, when the oil is again separated, take stale bread crumbs well dried, and sprinkle them upon it. The bread passing through the oil carries with it all impurities. Shake together once daily: let the vessel remain in the shade, well covered, on a table in your room, at any season. Within about a month the oil will be bleached, and as clear as water." †

* "Huile de lin ou de noix fort blanche et bien degraissée. — Prenez eau de pluye et faittes y dissoudre du sel. Meslez avec votre huyle et lavez en agitant longuement par plusieurs fois deux ou trois jours. Cela se peult faire dans une bouteille avec un feuilet au bas et la meilleur chose sera en agitant la bouteille de verre, tirez vostre eau salée et y en remettez de nouvelle faisant comme dessus par v. ou vi. fois. Après lavez la trois ou quatre fois avec eau doulce de pluye. Pour la bien desgraisser il y fault adjouster de la mie de pain, que passant par l'huile tombera à fonds et emportera quand y soit toute la crasse. Separez vostre huile et la gardez dans une phiole bien bouchée: elle sera claire comme eau." — *MS.* p. 143.

† "Ayez un vaisseau à gueule assez large dans lequel vous mettez eau et huile de lin bien depurée par residence; battez

The use of sand, in the mode recommended by Dreme, is at least as old as the time of Rubens. It has sometimes reappeared, like many of the early methods, as a supposed modern discovery. In Meusel's *Miscellaneen*, for example, it is communicated as if for the first time. A painter, Suhrland, having accidentally spilt some poppy oil on white sand, gathered up what he could mixed with the sand, and observed that in a few days the oil became less coloured, and more fluid.* The method is recorded by De Mayerne as a communication from Mytens, painter to Charles I., before the arrival of Vandyck. Coming from such a source, it may be classed among the processes which were familiar to the Flemish and Dutch painters.

" Colourless and thin linseed oil. — Mix the oil with water and white sand in a glass bottle; shake it three or four times a day till the contents appear like milk, and leave it constantly exposed to the sun in the month of March. In a month the oil will be as clear as water; and every time [after

bien ensemble et laissez revenir l'huile en dessus. Ayez de la mie de pain de froment rassis bien essuyée (le blanc est bon mais M. Adam s'est tousjours servy du bis) repandez le en saupoudrant avec les doigts dessus l'huyle à travers laquelle le pain passant il en emporte toutte la salleté. Battez fort ensemble tous les jours une fois et laissez vostre vaisseau à l'ombre bien couvert sur une tablette en vostre chambre en toutte saison. Dedans un mois ou environ vostre huyle se blanchira et sera aussi claire que de l'eau." — *MS.* 141.

* Meusel's Miscell. 1782, 14ter Heft, s. 116.

the vessel is shaken], the warmth of the sun, separating the oil from the water, purifies it, and at last bleaches it perfectly." *

On the authority of Van Somer, a painter of the same school, the writer adds: "It is the oil which causes the alteration of colours, but, when it is properly prepared, they will remain unchanged by it. The month of March is preferable, because the sun is then less powerful; in other [warmer] seasons the oil soon becomes thick, and is good for nothing." † The following mode of filtering is also dictated by Van Somer. "Take linseed oil in the quantity required; procure a vessel pierced at the bottom with holes, over which place a piece of linen; fill the vessel with perfectly dry sand, and pass your oil through it into a large pan of water, place this uncovered in the sun, in serene weather, for three weeks; leave it exposed day and night;

* "Huile blanche et *tenue* (subtil) ou fort liquide de lin.—Meslez l'huile avec de l'eau et y adjoustez du sable blanc dans une phiole (bassin ou terrine) battez la trois ou quatre fois le jour tant qu'elle deviendra comme laict, et la laissez continuellement au soleil de Mars. Dans un mois elle se fera claire comme eau et à chaque fois la chaleur du soleil la separant d'avec l'eau la dépurera et la blanchira à la fin parfaittement. Le soleil de Mars vault mieux que tout le reste de l'année car estant temperé il n'espaissit pas."—*MS.* p. 94.

† "Ce qui tue les couleurs c'est l'huyle, laquelle estant bien preparée chaque couleur que ce soit ne meurt point. Il la fault faire au mois de Mars lorsque le soleil est moings chaud aultrement elle s'engraisse incontinent et ne vault rien."—Ib. p. 95.

the oil will become as clear as water. Remove it before it becomes thick, and keep it for use." *

De Mayerne was also favoured with a receipt from Vandyck for purifying linseed oil. The directions, which are in bad Italian, are afterwards repeated, in a better form (supplied by Adam), in French; the substance of the two is as follows. "To bleach linseed oil in the shade.—Mix the yolks of two eggs in half a pint of aqua vitæ (not spirit of wine as it immediately coagulates yolk of egg); put this mixture with a quart of oil in a glass bottle in the shade. Shake the ingredients often, incorporating them with a quill split in four; then stop the bottle and let the contents settle. The oil becomes bleached in a few days; separate it from the sediment, and keep for use." †

* "R. de l'huile de lin tant que vous voudrez; ayez un pot percé au fonds: mettez un linomps sur les trous. Emplissez de sable bien sec et passez vostre huyle dedans une grande terrine ou bassin ou il y ait de l'eau. Mettez au soleil a descouvert et au serain, jour et nuit, trois semaines ou ung mois: elle s'esclaircira comme de l'eau. Ostez la devant qu'elle s'engraisse et vous en servez."—*MS.* p. 95.

† "Rta. Per inciarire [ischiarire] l' olio di lino del S^{or}. Cav^{l}. Antonio Vandyck. — Se piglia di due ova il rosso et se la batte bene una quarta parte d' un boccale d' aquavita comune mescolandolo con d^{to}. rosso d' ova il che si mettra int' un fiasco giungendo un boccale d' olio di lino; et movendo d^{to}. olio con l' ingredienti a tanto che il tutto diventi turbido il che si farà con penna squartata. Se cerra [serra] la bocca del fiasco et lasciandole quietare diventi ciariss^{mo}. in brevi giorni."—Ib. p. 138.

"Pour blanchir l'huyle de lin à l'ombre.—Meslez de l'eau de

Once purified and bleached (and it will be remembered that the colourless state is more likely to be durable when the mucilage is abstracted), the next object was to free the oil from the watery particles which may remain after the washing.* Exposure in glass bottles to the sun, or to a mode-

vie avec des jaulnes d'œufs; je dis eau de vie commune, non esprit de vin lequel cuit et endurcit incontinent les noyaux d'œufs et mettez cette mixtion avec vostre huyle dans une phiole à l'ombre agitant souvent vre vaisseau. Laissez jusques à tant que l'huile estant blanchie vous la couliez et la separiez du reste pour vous en servir. Adam m'a dit qu'il prend l'eau de vie commune et qu'il ne fault sinon laisser la phiole sur une tablette à l'ombre et que dedans trois semaines ou un mois au plus l'huile se blanchit parfaittement."—*MS.* p. 141.

Two other methods are here added. The first is recorded by De Mayerne, as a communication from Sorg. "Pour blanchir l'huile de lin ou de noix dans un mois.—Battez l'huile fort longtemps avec de l'alum, adjoustez y de l'eau; mettez au soleil et battez tous les jours vre dicte huile tant qu'elle blanchisse en battant; puis la remettez au soleil continuant jusqu'à tant qu'elle devienne blanche, claire et transparente." The following method is now occasionally practised. Fill a glass bottle two thirds full of linseed oil; fill up the remaining space with pure sifted snow; cork loosely, but so as to effectually exclude dust. In six months the oil is clarified.

* For the manufacture of bright oil varnishes, it is necessary that every particle of water should be previously abstracted from the oil; and it is scarcely less desirable that oils intended for painting should be equally free from aqueous particles. The tenacious slimy state in which colours are sometimes found is not unfrequently the consequence of their having been ground, and long kept with some portion of water mixed with the oil; in this state they are slow in drying. See Fernbach, Die Oelmalerei, &c., München, 1843, p. 75.

rate artificial warmth, is the usual mode of effecting this. Air should not be entirely excluded during the process; the vessels might be covered with some porous material fit to imbibe the moisture which may be evaporated.* When the oil is freed from water, the bottles should be well stopped, otherwise the action of the air would gradually thicken the fluid, and generate or increase the oleic acid. The oils and varnishes used by the Dutch painters were kept where the warmth of the sun could occasionally act upon them, and still promote their clarification: various pictures, representing Dutch artists in their painting-rooms, indicate their technical habits in these particulars.

While the oil is in this state of rest, certain ingredients may be added tending to absorb any aqueous particles that may remain in it. Among such ingredients may be named burnt alum and calcined borax: the first is often mentioned in early receipts, and is even recommended to be introduced into varnishes for the purpose of clarifying them. These, or similar substances, may be suffered to remain in the oil for any length of time.†

* Oil is soonest freed from watery particles, and more quickly bleached, by being exposed to the sun in shallow vessels; these should be covered with glass or with gauze, or with prepared bladder, through which the aqueous particles may exude, and which may be contrived to admit air.

† Calcined white copperas, in a perfectly dry state, and sifted to a fine powder, is not only the best and most innocent dryer, as a metallic oxide, but is a powerful absorbent, thus further

Some modes of purifying oil, besides having the effect of removing mucilage, operate as absorbent dryers or as alkaline correctives. Calcined bones, chalk, lime, magnesia, and other substances, either contrived to perform the office of filters in the ordinary mode, or, when mixed with the oil, tending to purify it by subsidence, have been tried with more or less satisfactory results; but exposure to the sun or sufficient rest is still necessary to complete the process.

The modes of rendering oil clear and drying with calcined bones have also been sometimes published as modern inventions. A process similar to the comparatively recent method of Grandi is given by De Mayerne, who, again, appears to copy Boltzen. Calcined bones, as already shown, are mentioned by still earlier writers: they are noticed not only as ingredients in the preparation of a drying oil, and as an occasional substitute for white lead, but, when finely pulverised, as a means of removing grease: thus employed, the powder has been found useful in thoroughly cleansing the surface of a

promoting the siccative tendency and clearness of oils and varnishes. "From its astringent quality it immediately seizes on any aqueous particles, whether from the oil, gum, or turpentine, if a sufficient quantity is used. Such is its astringent and absorbent quality, that if even water were mixed with the varnish the copperas would seize upon and carry it down to the bottom; neither will it ever combine with the oil as calces of lead do."—*J. Wilson Neil on Varnishes: Transactions of the Society of Arts*, vol. xlix. part 2. p. 56.

picture from oily exudations before varnishing it.* In the treatise of Valentine Boltzen, which corresponds in many particulars with the Strassburg MS., the ingredient in question is described as a powerful dryer; for example: "If you wish your varnish to dry quickly, take sheep's bones, place them in a new earthenware vessel and lute the cover close. Set this in a strong fire for two hours; after which remove it and let it cool. Pound the bones like fine flour; sift the powder through a hair sieve, and stir a portion about the size of a walnut in the boiling varnish; the fluid will then dry readily on any surface. If you cannot procure linseed oil, take, instead, old nut oil or hempseed oil of the clearest and best kind."†

* The Venetian MS. contains a receipt for the removal of grease by means of finely pulverised calcined bones with the aid of heat, in the ordinary way. The early Italian painters prepared drawing-tablets and drawing-paper with calcined bones of fowls reduced to a very fine powder. It was on this paper that they drew with a silver point—"la ponta d' argento supra la mistura d'osso brusato." (*Carteggio d' Artisti*, tom. iii. p. 175.) Cennini (c. 7.) observes that the bones might be collected from "under the table." The Spanish painters, to this day, preserve bones after their meals for the preparation of ivory black (negro de hueso).

† "Hie merck allwegen, wenn du den Virniss haben wilt, dass es bald truckne, so nim schaf beyn, thue die in einn neuwen hafen, und verkleybe mit leymen den deckel oben gar wol, setzs in einstarck fewer ii. stundt, darnach thu den hafen herab, lass es erkalten. Nimm des beyns $\overline{un}$ stoss es wie reyn meel, dz̃ er gar nit rauch sey. Beutels durch ein har sib, und rür es einer nuss gross in dem heissen firniss, dz̃ es darmit

The use of pumice stone, together with calcined bones (as in the Strassburg MS.), is also recommended by Boltzen. "Take old and clear hempseed oil, place it in a vessel on the fire, carefully skimming it as it boils. Take white pumice stone and calcined sheep's bones, pound them well and sift the powder: stir this gradually in the hot oil. Should the oil froth again, skim as before and let it boil well. Then take it from the fire, and place it for two days in the warm sun. If you wish to make it strong, take two ounces of mastic, pound it very fine, and stir it gradually in the oil while it is hot." * This preparation with mastic, it will

erwallet, so truckenet es gar baldt warauff du in streichest. Magst du nit allwegen ankommen Leinsatöle so nim dafür alt nüssöl, oder hanfföl das gar lauter un̄ schön sey, allwegen in dem gewicht oder mensur wie obstehet." —*Illuminir-Buch, künstlich alle Farben zu machen, &c., durch Valentinum Boltzen von Rufach,* 1566, p. 4.

* "Nimm alt lauter hanföl thů es inn ein Kesselein, machs heiss und schaums sauber, nimm weissen Bimsteyn und gebrañt Schaffbeyn das stoss und beutels gar reyn, rür es gar sittiglich under das heyss öle. Schaumet es dann wider, so schaume es ab, und lass es einn gůten wall thůn. Darnach hebe es ab, und stells zwey tag an die warm Soñ. Wiltu nun starcken haben, so nim̄ vier loth Mastix, stoss es zu reinem pulver, und rür es in̄ das heiss öl sittiglichen."— *Illuminir-Buch,* p. 5.

In an extract from the Strassburg MS. before given (p. 131.), it will be seen that the powder of calcined bones was also mixed with the colours as a dryer. With reference to the use of this material and of pumice stone by the early painters, it may here be stated, that in 1844, Mr. W. Marris Dinsdale, at the author's request, undertook to analyse a fragment of a picture by Cariani of Bergamo (a contemporary and scholar or imitator of Gior-

be observed, is not dissimilar from the vehicle ascribed to Vandyck in a receipt before quoted.

Of the above mentioned materials, some would have the effect of freeing oil from its acid as well as from its aqueous particles. The earliest known mode of the kind appears in the Paris copy of Eraclius; a small quantity of lime is there directed to be added to the oil, together with white lead. The painters of the seventeenth century sometimes purified their oil in this way; for example: "Linseed oil becomes bleached in a very few days, if to a pound of the oil you add one quarter [?] of lime in powder, in a long-necked bottle. Shake daily; the oil becomes bleached, and does not thicken."* This

gione). Mr. Dinsdale observes of the gesso ground, that it was "interspersed by grains resembling pumice." Speaking of the pigments, he adds: "Crude white of lead, with calcareous matter, very general throughout the picture: with ochres, and I believe, cinnabar. No trace of animal or vegetable matter, save resin, with a general tendency to blacken by heat, which the use of pumice or a sulphuret would account for. Inclined to run, but doubtfully, before the blowpipe, with the exception of one portion which ran fairly into the vitrified state. Hypothetically, I should say, had burned bones in it. Crude carbonate of copper very conspicuous in the drapery round one arm." &c. Octob. 12th, 1844.

Mr. Dinsdale at the same time observed: "Every colour mixed with phosphate of lime (calcined bones) vitrifies when exposed to strong heat; as Venetian pigments vitrify, might not phosphate of lime have been used as a dryer."

* "L'huile de lin se blanchit dans fort peu de jours si à une livre d'iceluy vous adjoustez un quarteron de chaux vive mise en poudre subtile, dedans un matras ou phiole à col long;

receipt, given by De Mayerne, appears under the name of Sorg; a similar process is noted elsewhere in the same MS. It appears to have been not uncommon in Holland. An English student in the university of Leyden, in the seventeenth century, records a method there taught for preparing drying oils, whence it appears that lime and chalk were introduced while the oil was on the fire, for the purpose of "neutralising its acid." * Wood ashes have also been used. "To make a thick but clear and very drying oil, fit to mix with colours that have no body, and serving to sustain them so that they shall not sink in the oil.—Take clean warm oak ashes, in quantity about a fourth part of the oil to be used: pour on them a pint of nut oil; leave it for week or fortnight; you will obtain your object." †

agitez assez longtemps touts les jours. L'huile blanchit et ne s'espaissit pas."—*MS.* p. 148.

* "Præparatio ol. lini et cæt^{m}. aliorum oleorum pro vernicibus. — R. ol. lini q. s. coquatur super ignem. Dein injice frustum panis ut illico fermentationem seu effervescentiam quandam faciet, exhalantibus particulis aquosis. Deinde injiciatur aliquod alcali, ut creta, calx, et diversæ calces plumbi ut acidum ejus infringatur. Oleum illud postquam pulveres subsiderint per subsidentiam vel per decantionem clarificetur. Huic ita præparato et denuo igni exposito injiciantur pulveres convenientes scilicet succini præparati, aspalathi, sandarachæ," &c. — *Collectanea Chymica Leydensia. Christophorus Love Morley, M.D. Anglus.* Lugd. Batav. 1680.

† "Pour faire une huile espaisse, claire pourtant, fort siccative, propre à mesler les couleurs qui manquent de corps

In these last methods (though it appears they were not uncommon at a period when much attention was paid to materials) there is some danger of saponifying the oil by the immixture of the strong alkaline ingredients: the use of magnesia, which answers the chief end proposed, may be considered less objectionable. Place the oil on the fire, and suffer it to boil gently for three or four hours; remove the scum as long as it forms any. Then add, by degrees, calcined magnesia, in the proportion of a quarter of an ounce to a gallon of oil. Boil well for another hour. When removed from the fire, the covered vessel should be left undisturbed for three months. The magnesia, subsiding, absorbs all acid and mucilage, leaving the oil light and transparent.*

Among the approved modes of freeing oil from its acid, and otherwise purifying it, may be mentioned the use of spirit of wine. Pacheco, a Spanish writer, recommends 3 oz. to be mixed with a lb. of linseed oil (other ingredients which he names are unimportant): the bottle should be placed in the sun for a month, and shaken three times a day. Pacheco observes that the oil so purified may be

afin de leur en donner, pour ne tomber à fonds de l'huile. — R. cendres de chesne nettes, chaudes, une poignée, revenant à la quatrieheme partie de la quantité de l'huile. Versez dessus une pinte d'huile de noix. Laissez ensemble 8 ou 14 jours: vous aurez vostre intention."—*MS.* p. 16.

* J. Wilson Neil on the Manufacture of Varnishes: Trans. of Soc. of Arts, vol. xlix. part 2. p. 43.

safely used with blues, whites, and flesh-tints.* A modern writer gives a similar receipt. "A simple process for rendering oil light and pure is, to mix two oz. of poppy oil with an oz. and half of spirit of wine, placing the bottle in the sun or in a moderately warm oven. In about a fortnight the oil will be clear and nearly colourless."†

The ordinary modes of rendering oil drying by means of metallic oxides remain to be considered. In this instance, again, the methods of the fifteenth century — methods probably introduced by Van Eyck — happen to correspond with those which have been most approved by modern writers. The use of white copperas, as recommended from first to last in the Flemish school, has been already noticed. Another mode of employing this ingredient is here added from a modern writer. "Into four pints of pure soft water put two oz. of foreign [German] white copperas; warm the water in a clean copper pan or glazed earthen jar, until the copperas is dissolved; pour the mixture into a clean glass or stone bottle, large enough to contain three gallons; then add to the solution of copperas one gallon and a half of poppy oil; cork and agitate

* Arte de Pintura, &c. p. 398.

† Fernbach, Die Oelmalerei, &c. p. 70. With regard to the oleic acid, it may be observed that the ingredient, even in excess, can only affect some delicate vegetable colours; thus, it reddens vegetables blues. (See Brande, *Manual of Chemistry*, p. 1128.) Other remedies for this supposed evil are therefore omitted.

the bottle regularly and smartly for at least two hours; then pour out the contents into a wide earthenware dish; leave it at rest for eight days, when the oil will be clear and brilliant on the surface, and may be taken off with a spoon or flat skimmer, and put up in a glass bottle and exposed to the light, which, in a few weeks, renders the oil exceedingly limpid and colourless."* On the whole, perhaps, no better method of preparing a drying oil can be recommended than that described in the Strassburg MS., if the oil be not suffered to become too thick. White copperas being unquestionably the safest metallic dryer, it may appear useless to give any accounts of other materials and methods; but, as it is certain that preparations of lead were early in use, and that they were also common in the Flemish school during the time of Rubens, they cannot be passed over in a history of processes.†

* J. Wilson Neil, Trans. of Soc. of Arts, vol. l. p. 34. The operation may be performed with the aid of heat as follows. "Dissolve an oz. of white copperas in three lb. of pure water; add two lb. of poppy or other oil, and place the whole on the fire. When the water is reduced about a half or two thirds, pour the remaining contents into a glazed earthenware vessel, and let them remain till the oil has become clear. It is then to be separated from the water, and allowed to remain undisturbed for a few weeks longer; it then becomes as clear as water." — *Fernbach, Die Oelmalerei*, &c. p. 7.

† It is to be remembered, that white copperas requires to be well dried, if not calcined, before it is used; its immixture in oils without this precaution would be injurious. (See J. Wilson Neil, *Transactions*, &c. vol. xlix. part 2. p. 56).

Sugar of lead, also, requires to be dried. "All sugar of

With regard to the exaggerated objections to this ingredient, it should first be observed, that the quantity of lead which oils can dissolve, without the aid of heat, cannot possibly affect colours so much as the immixture of white lead, which, as a pigment, enters largely into the solid portions of every picture. To avoid combinations of lead with the oil which is necessarily mixed with white lead, therefore appears to be a useless precaution. On the other hand, it is to be remembered that the colours which would be injured by the immixture of white lead would also be affected by oils prepared with that mineral in any form. This appears to be the chief ground of the caution often given with respect to drying oils. The use of acetate or sugar of lead is further dangerous, on account of its tendency to re-crystallise, thereby rendering the transparent colours dull; the extreme case of its visible efflorescence can only occur when it is used in unnecessary abundance. The objections to drying oils on account of their darkness need not exist, as the oils can be rendered nearly colourless in the modes before described.

lead contains about 14·2 per cent of the water of crystallisation, so that to use it in that state is very injurious to the varnish, as its water prevents that complete union of the particles of gum, oil, and lead, which ought to combine and form a whole." (Ib. p. 55.) This substance, if mixed with colours, should be dried only, not calcined; as, in the latter state, its opaque whiteness destroys the transparency of the dark colours.

Among the early examples of drying oils prepared with white lead, the method recorded in the Paris copy of Eraclius (perhaps anterior to the time of Van Eyck) is not to be forgotten. Minium, as has been shown, occurs more than once in receipts of the fifteenth century, and both ingredients reappear in the succeeding age. A peculiar kind of Venetian glass, used, when pulverised, as a dryer, contained a considerable portion of lead; and, if it acted chemically, may have derived its siccative quality from that ingredient. The following are examples of the use of lead in the beginning of the seventeenth century.

Sorg. "Put linseed or nut oil on the fire in a glazed earthenware vessel. Suffer it not to boil, but when it simmers remove it, and throw in litharge which has been previously well washed and dried: stir with a spatula or stick, afterwards cover the vessel and let it remain fifteen or twenty days. The oil will become colourless and very drying."*

Mytens. "Boil linseed oil with litharge and minium on a slow fire, without suffering the fluid

* "Huile de lytharge fort claire et blanche. — Mettez vostre huile de lin ou de noix sur le feu dans un pot de terre neuf vernissé faittes la chauffer non qu'elle bouille mais qu'elle commence à fremir. Tirez la du feu et jettez dedans vostre lytharge bien lavée et bien seichée remuant assez longtemps avec un spatule ou baston. Couvrez vostre pot et laissez reposer quinze ou vingt jours. Vostre huile se blanchira en perfection et sera fort siccative."— *MS.* p. 143.

to foam over; it will become like a syrup. Place it in the sun, in the month of March, in bottles. Leave it till it becomes clear, and in appearance like Canary wine."*

"*Dieterich Keuss*, a painter of Hamburg, bleaches oil in two modes. 1. Put white lead well ground in oil in a wide-mouthed vessel; pour purified linseed oil on it. Place it on the fire and heat it well for about an hour without suffering it to boil; stir with an iron or silver spatula; take it from the fire and let it settle. The following day your oil will be nearly colourless. 2. Pieces or shavings of a certain porous white wood are to be obtained in Germany which serve as tinder for guns: place your oil on pieces of this touchwood in a proper vessel and leave it for a considerable time. The wood attracts all the colouring ingredients of the oil and bleaches it."†

* "18. Septemb. 1629. M. Mitens peintre trèsexcellent. Huile siccative.—Faittes bouillir l'huile de lin avec de la lytharge et de la mine et ce à lent feu sans qu'il esponde; il deviendra comme un syrop. Mettez la au soleil de Mars dans diverses phioles [De Mayerne inserts "voyez en vaisseau ouvert"] et la laissez jusqu'à tant qu'il esclaircisse et demeure aussi beau que du vin de Canarie." The writer adds: "Possible fault il plus long soleil que celuy de Mars; essayez. Mais tant plus l'huile a de chaleur tant plus elle s'espaissit."—*MS.* p. 94. verso.

† "Dieterich Keuss, peintre de Hambourg, blanchit l'huile de lin en deux façons. 1. En un vaisseau large mettez du blanc de plomb bien broyé avec huyle et versez vostre huyle, bien dépurée par residence, dessus. Mettez sur le feu et faittez chauffer à

Van Somer. "Pour nut oil on well pulverised litharge: place the vessel on the fire and stir constantly. When it begins to boil, remove it; the ebullition past, place it again on the fire; repeat this five or six times. Let it settle, and keep for use. A drop or two should be mixed with the colours, already ground, on the palette: this oil becomes clear and colourless."*

In all these instances, where the oil is exposed to heat, it is to be supposed that it had been previously washed; and it will be observed that great care is taken to prevent its carbonisation. A modern writer, before quoted, recommends drying oil to be prepared thus. "A glass bottle containing the purified (washed) oil is placed in a water-bath, which is heated to ebullition. The bottle should have a wide opening, in order that a considerable surface of oil may be exposed to the action of the air. If

bon escient environ une heure sans que vostre huile bouille, remuant avec une spatule de fer ou d'argent. Ostez de dessus le feu et laissez reposer. Des le lendemain vostre huyle est blanche. 2. En Allemagne on a des couperons ou rabotteures d'un bois blanc dont on se sert pour amorce de fusil ; mettez sur iceulx vostre huile dans un tonnelet, et laissez longtemps. Le bois attire toute la jaulneure de l'huyle et la blanchit." —*MS.* p. 137. verso.

* "R. lytharge d'or, silberglette, bien pulverisée ; mettez de l'huyle de noix dessus ou de lin, et remuez sur le feu ; quand il commencera à bouillir l'ostez du feu et le bouillon passé remettez sur le feu et ce cinq ou six fois. Laissez rasseoir et guardez pour en mesler une goutte ou deux sur la palette avec vos couleurs broyées. Ceste huile s'esclaircit très bien et devient blanche." —Ib. p. 96.

metallic oxides, such as litharge, white lead, or white copperas, are used, they are first enclosed in a small bag, and are suspended in the oil from the mouth of the bottle. White lead alone may be used in the proportion of 1 oz. to 4, 5, or 6 oz. of oil, according as the oil is to be more or less drying. The oxide of zinc or calcined white copperas (which makes a lighter drying oil) may be used in greater quantity. The boiling in the water-bath should continue at least sixteen hours. After twelve hours, the contents of the bag are mixed with the oil. The oil should afterwards remain for a week or fortnight, either exposed to the sun or placed near an oven; the drying materials subside entirely, leaving the oil clear."* Thus prepared, it retains its natural colour: as white lead does not leave it ultimately turbid, so red lead and litharge subside in time, scarcely tinging the oil if it has been previously freed from its mucilage. In large operations the water-bath is not used, but the same result is obtained by placing in the vessel a quantity of water equal to half the quantity of the oil: the contents are then less likely to become carbonised.†

* Dreme, Der Virniss- u. Kittmacher, &c. p. 30.

† A portion of water may be added, even when the process is conducted on a small scale. An eminent painter, lately deceased, was in the habit of boiling two quarts of linseed oil with a quarter of a pint of water together with white lead and litharge, for one hour, according to a Flemish receipt. He states that the oil he used was twenty-eight years old.

Other metallic oxides have been sometimes employed; of these, verdigris, though among the earliest, cannot be recommended. The following modern receipt is less objectionable. "To a lb. of poppy oil, from two to three oz. of red precipitate (oxide of mercury) were added. The vessel was placed in the sun. After a time—from four to six weeks—a slimy sediment of a grey colour was formed. The mercury had parted with its oxygen, the oil being thereby rendered thicker, more resinous and drying; while the metal remained in its original state in small grains."*

Lead, in its natural state, was not unfrequently used for the same purpose in the seventeenth century. The more modern practice has been to throw small shot or lead filings into the oil.† Some writers have supposed that this ingredient promotes the deposit of mucilage, as a considerable whitish sediment soon appears.‡ This seems to be an erroneous view: on examining the shot afterwards, it will be found that they have lost their polish and have been slightly decomposed. The sediment,

* Fernbach, Die Oelmalerei, &c. p. 69.

† From the following receipt in the Venetian MS. it may be inferred that this ingredient, although, in the instance quoted, serving to thicken common oil, may have been used in the fifteenth century as a dryer for the oils employed in painting, "A conservare le armi lugenti. — R. piombo limato e mitelo ī lolio p spaçio de 9 zorni e poi di questa roba unzi le armi."

‡ See Verri, Saggio elementare sul Disegno, &c., Milano, 1814, p. 110.

therefore, more probably consists of lead combined with the acid of the oil: the fluid is undoubtedly rendered clearer as well as more drying by the process.

In the older method, the oil was placed in small lead troughs and exposed to the air; thus treated, it soon becomes drying and nearly colourless, and, if such a result were desired, it would, in process of time, thickening more and more, attain its maximum of solidification. Cennini (c. 92.) speaks of exposing oil to the sun in "a bronze or copper vessel, or in a basin:" by the latter, he may have meant the pewter basins, such as are still in common use instead of earthenware, for washing, in remote districts in Italy. The following observation is derived from Mytens. "Poppy oil bleaches and becomes more drying, if exposed to the sun for three or four days in a shallow pewter plate covered with a plate or basin of glass."* Another Flemish authority describes a still more effectual mode. "Grind white lead in pure water; make pastilles with it and dry them on chalk in the sun, or on a clean tile. Put your pastilles in a [shallow] leaden vessel, and pour nut oil on them, so that it may cover them. Place the vessel in the sun, and leave it till the oil acquires

* "L'huile de pavot se blanchit et se rend plus siccatif si on la met dans un plat d'estain couvert d'une lame ou bassin de verre au soleil trèschaut par trois ou quatre jours au plus."—*Mayerne MS.* p. 20. verso.

the consistence you wish, and becomes as clear as water. You may render it so thick, by leaving it long thus exposed, that it will rope, or may even be cut."* The solidification of drying oils, as is well known, may take place without the aid of metallic oxides, and solely by combination with oxygen derived from the air; the experiments of De Saussure on this subject are familiar.† Bouvier found that poppy oil became slightly thickened only while it was kept on water in a well-stopped bottle; but a portion being separated from the

* "R. du blanc de plomb; broyez le très bien avec l'eau pure, puis en faites des pastilles que ferez seicher sur la craye et au soleil, ou sur une tuile bien nette. Arrangez vos pastilles sur un bacquet de plomb et versez dessus de l'huyle de noix tant qu'il surnage; mettez au soleil et l'y laissez jusques à tant qu'il espaissit autant que voudrez et qu'il esclaircisse comme eau. Vous la pouvez rendre si espaisse en la laissant fort long temps au soleil qu'elle file et se coupe."—*MS.* p. 20.

Mr. Andrew Wilson, who, during his long residence in Italy, has been enabled to detect remains of the older technical processes, has communicated a similar experiment; the white lead only is omitted. "The leaden trough being placed in the sun, the oil [in this case, linseed or nut oil, as the Italians never appear to have used poppy oil] should be occasionally stirred, till this can be no longer done, from its becoming like a piece of India rubber. It may be cut out of the trough with a knife. In this state it is put into an earthen pot, and dissolved in spirit of turpentine over a moderate fire, taking care that the varnish does not become brown. Afterwards strain and closely stop." The lead trough is also mentioned in the *Encyclopédie Méthodique, Beaux Arts*, tom. ii. p. 656.

† See Annales de Chimie, tom. xlix. p. 231.

water (in a bottle which admitted air) solidified in a few days.*

It was observed that poppy oil, as a medium for painting, was introduced latest. The observations respecting it in the Mayerne MS. show that its general qualities were still a matter of speculation in the beginning of the 17th century. The following statement appears under the name of Mytens. "Mancop oly † is a very white oil which is used by the painters of the Netherlands, who execute delicate works requiring lively colours, such as the vases of flowers of De Ghein‡ and similar productions. This oil does not dry of itself easily, but it is usually ground with Venetian glass, and then exposed to the sun in a glass bottle. This should be shaken every four days, for three or four weeks; it should then be carefully decanted for use, leaving the sediment

* Manuel des jeunes Artistes et Amateurs, seconde édition, à Paris, 1832, p. 185. Bouvier remarks in a note: "This fact proves that oil thus washed not only becomes very white, but acquires at the same time a drying quality." It had derived oxygen from the water.

† Maancop olie. Maancop (moon-head) the poppy. Van Mander, perhaps the earliest writer who mentions poppy oil with reference to painting, calls it Heulsaeds oly: both terms are still in use.

‡ Jacob de Gheyn, the elder, was born in 1565, and died in 1615. His son had the same name. Both appear to have painted flowers and fruit, and both were also engravers. The portrait of the elder De Gheyn, with a vase of flowers and a bottle of oil among the accessories introduced, is engraved by Hondius; the date is 1610.

with the glass."* The mode of rendering it drying, by exposing it to the sun in a pewter vessel, has been already described. De Mayerne adds: "M. Vannegre, a Walloon painter, states that the oil thus prepared dries sufficiently well." De Mayerne himself, speaking of different oils, observes: "If these oils (linseed and nut oil) cannot be procured, hempseed oil may be used, although it rather inclines to a green colour; or if you happen to be in a convenient district, for example, in the neighbourhood of Orleans, the oil expressed from the seed of the white poppy is very excellent and very drying [and may be used accordingly]."† He, however, adds, in a marginal note: "It is not drying, unless it is rendered so by artificial means." Elsewhere he again ob-

* "Mancop oly est une huyle fort blanche dont se servent aux Pays-Bas les peintres qui travaillent en ouvrages delicats qui requierent des couleurs vives comme aux pots de fleurs de Ghein et semblables. Ceste huyle ne se seiche pas aisement d'elle mesme mais on la broye avec du verre de Venise et puis on les met ensemble au soleil dans une phiole qui doibt estre agitée de quatre en quatre jours par quelque trois ou quatre semaines. Fault verser le clair par inclination quand on s'en voudra servir et laisser le reste sur le verre." — *MS.* p. 21.

† "Au deffault de ces huyles en cas de necessité on peult user de l'huile de la graine de chanvre encore qu'elle ait quelque verdeur; ou si on est en lieu commode, comme au pays de Gatinois, l'huyle de pavot blanc est très excellente et très siccative estant faicte de la semence par expression.

"Elle n'est pas siccative si vous ne la rendez telle par artifice." —Ib. p. 47. verso.

serves: "The oil expressed from the seed of the white poppy is very light and drying; it forms a skin [in drying]. A painter caused a considerable quantity to be prepared for M. Laniere, and said that it did not injure the colours. Nut oil is better than linseed oil."* Again: "To prepare oil for painting white, blue, and similar colours, so that they shall not yellow. Take the grain of the poppy, extract the oil, and mix this with the colours."† In another place he also recommends it for air-tints and blue. At the same time, he remarks that pictures painted with linseed oil bleach better in the sun than those which are executed either with nut or poppy oil.‡ The experience of the moderns in regard to this question is rather in favour of poppy oil, which is said to bleach in ordinary light.

* "L'huile de semence de pavot blanc est fort claire et siccative, puis elle faict une peau au dessus. Un peintre en faisoit faire beaucoup à [pour] M. Lanyre et disoit qu'elle ne gaste point les couleurs. L'huile de noix vault mieux que celle de lin." — *MS.* p. 97.

† "Pour faire huile à peindre sur le blanc, azur et toute aultre sorte de couleur qui ne jaunit point. — R. la graine de pavot blanche et en tirez l'huile et la meslez avec vos couleurs." — Ib. p. 113.

‡ "La meilleure [huile] est l'huyle de lin laquelle si en la peinture devient jaulne en mettant le tableau au soleil les couleurs se vont toujours esclaircissant, ce qui n'arrive pas en l'huyle de noix ni en celuy de semence de pavot. N. (aultres preférent l'huyle de noix.) L'huyle de pavot est bon pour le bleu, quand on fait le ciel, l'air," &c. — Ib. p. 7.

That the Dutch painters gradually preferred poppy oil for some purposes may be gathered from the treatise of Willem Beurs (the scholar of Drillenburg), who lived in the latter half of the seventeenth century.* He observes: "When they [certain materials for white pigments] are dry enough, they are ground in the very best poppy oil, which is better than nut oil, linseed oil, or other known oils." Elsewhere he directs that various colours are to be ground in linseed oil, "the whiter the better." Later writers noticing the practice of the Northern schools, and deriving their receipts from Flemish and Dutch authorities, commonly recommend that delicate colours should be ground in poppy oil.†

The Spanish and Portuguese writers, on the other

* De groote Waerelt in 't kleen geschildert. Amsterd. 1692. (See Houbraken, iii. Deel, p. 355.) In the German translation (Amsterd. 1693), the passages quoted occur in p. 9. 16. Houbraken was himself a scholar of Drillenburg.

† "Il y a des peintres qui ont employé de l'huile tirée de la graine de pavots blancs, parcequ'elle est beaucoup plus blanche et plus claire que l'huile de noix, et qu'elle a d'ailleurs la même qualité d'être siccative : mais ce raffinement n'est bon que pour de très-petits ouvrages où l'on recherche tout ce qui peut contribuer à la beauté et à la vivacité des couleurs." — *De Piles, E'lémens de Peinture*, Paris, 1776, p. 138. He also recommends the zinc dryer : "la couperose blanche fondue et séchée sur une platine de fer." On the subject of poppy oil compare the *Encyclopédie Méthodique* (*Beaux Arts*, 1791, tom. ii. p. 437. art. Huile) ; Bardwell, *Practice of Painting*, &c. 1756, p. 7, &c.

hand, do not mention it, and some even recommend the use of linseed oil, their ordinary vehicle, for all colours. Pacheco boasts that some Italians supposed he had used ultramarine when he had employed a common blue; and states, as a subject of greater wonder, that his blues and whites were never painted with the universally extolled nut oil (which, he says, he was not in the habit of using), but with that of linseed; "although," he adds, "some say that blue and white should never see this oil."* His method of employing it will be noticed hereafter. Nunez also proposes modes of using linseed oil, so as to render it a substitute for nut oil.† Palomino does not speak of poppy oil, but mentions the oil extracted from the seed of the pine tree as fit, like nut oil, for white and blues.‡

* "I en esta parte algunos Italianos que an visto mis Azules se an persuadido que son ultramarinos procurando ver con que secreto los gastava: i lo que mas admira, que no ven mis Azules ni mis blancos, el Azeite de nuezes, tan riverenciado de todos, porque nūca lo uso, ó mui pocas vezes. El de linaza no me quele mal; aunque ai quien diga que no a de ver el Azul ni el blanco este Azeite." — *Arte de Pintura*, Sevilla, 1649, p. 392.

† "Quando quizerdes fazer Aluyalde que se possa uzar como com olio de nozes, moieo Aluyalde na pedra muito bem com agoa et depois che botay o olio de Linhaça, et vereis, que indo moendo, a agoa se vay saindo para fora, et fica Aluyalde sô com o olio que parece purificado." — *Arte de Pintura*, em Lisboa, anno 1615, p. 50.

‡ "Otro aceyte hay en vez del de nueces para azules y blancos, que es el de piñones, dexandolos enranciar algun tiempo despues de quebrantados y descascarados," &c. — *El Museo Pictorico*, tomo segundo (1724), p. 55.

It will have been seen that De Mayerne omitted no opportunity of consulting persons of practical knowledge on the subject of oils and pigments; and it seems that he was equally ready to communicate the result of his own experience to those who needed his assistance. An interesting letter written by Joseph Petitot of Geneva, the brother of the celebrated enameller, is bound up with the physician's notes.* The writer gives an account of his mode of rendering cloth waterproof; and, in thanking De Mayerne for his former instructions, submits further questions to him. He states that he had tried the calcined bones and pumice stone to make a siccative oil, but found that umber, his ordinary dryer, was quite as effectual. It will be remembered that, for the object intended, the colour of the oil was unimportant; it was even reduced to a thick consistence by being burnt. Another manufacturer of such materials (Wolffen) states that, having tried litharge and minium, he found that the oil, with the latter ingredient especially, dried hard, and that the stuff on which it was spread was consequently apt to crack. He found that burning the oil for a time, without any siccative ingredient, rendered it sufficiently drying. On the oils, generally, he observes: "The two best oils are linseed and nut oil. There is this difference between them: linseed oil dries at first on its surface and forms a skin; what is underneath is

* It is dated Geneva, 14th January, 1644.

long in drying, though it dries at last; but nut oil dries entirely and [throughout its substance] in a shorter time, for example, in three or four days; much better in the air and sun than in the shade."*

De Mayerne suggests that the oil, without being set on fire, might, by long boiling, be thickened sufficiently for the purpose required, and, at the same time, be rendered drying. The mere boiling of oils in this way, with a view to obviate the use of metallic oxides, is recommended by the anonymous author of a useful treatise quoted in the *Encyclopédie Méthodique;* he suggests that nut oil should be boiled in a water-bath for an hour.†

* "Les deux meilleures huiles sont celle de lin et de noix: avec ceste différence, que celle de lin seiche prémièrement en sa superficie et faict une peau, le reste estant plus long à seicher encor qu'il la face à la longueur. Mais celle de noix se seiche entièrement et en moins de temps, come en trois ou quatre jours, beaucoup mieux à l'air et au soleil qu'à l'ombre." The date of this memorandum is 2. January, 1640. De Mayerne adds in the margin: "Ex ipsius ore."

† "Le moyen d'avoir une huile qui sèche bien, c'est de faire concentrer un peu celle de noix, en la faisant bouillir une heure au bain-marie. On peut encore en essayer d'autres. Je me contenterai d'indiquer celle de copahu: nette, limpide, odoriférante, cette huile m'a paru sècher très-vîte, même avec les couleurs les moins siccatives; on pourroit y mêler un peu d'huile de noix ou de lin."— *Encycl. Méthod., Beaux Arts,* tom. ii. p. 437. The treatise here referred to, and which is often quoted in the same work, is entitled: "Traité de la Peinture au Pastel, &c. par M. P. R. de C. C. à P. de L. Paris, chez Defer de Maisonneuve, 1788." The writer is mistaken

An eminent foreign professor, writing to the author of the present work on the subject of oils, observes: "The rapid drying of the oil seems to me to be a chief condition, not only for the hardness and compactness of pigments, but also for their purity and durability. Cennini, in his 91st chapter, says 'the more slowly you allow it to boil, the better it will be.' Pure linseed oil, without any addition of sugar of lead or litharge, acquires, by prolonged and gentle boiling [langsames kochen], the power of drying in a night, and renders the linseed oil varnish and all such siccatives unnecessary. It remains long unchanged in consistence and thinly flowing: at this time [1845] I am using an oil of the kind, which I prepared in 1838."

The opinion of Vandyck on the relative fitness of the oils used in painting will be given in another chapter.

in objecting to white copperas because it contains sulphuric acid. Sulphate of zinc (purified by being dissolved and re-crystallised), when calcined, loses the sulphuric acid, and is converted to the oxide of zinc.

ADDITIONAL NOTES.

The usual mode of increasing the siccative quality of oils, while exposed to strong heat, by the addition of metallic oxides, may afford a test of the relative fitness of the dryers so

used. The following remarks by practical writers are worthy of notice : —

"The oil quickly absorbs the oxygen of the metallic substance, which latter is then partly soluble in the fluid. Linseed oil [with the aid of heat] can disolve the fourth part of its weight of litharge, and the mixture when cold solidifies in a mass similar to caoutchouc. This substance, again dissolved and applied with the brush, forms an elastic varnish impermeable to water, and which, in many cases [but better on inflexible surfaces], may be used as a substitute for caoutchouc. The oxides of iron are, in like manner, easily dissolved in oil. The oxides of zinc, on the contrary, are difficult of solution in oil, even with the aid of heat; nevertheless, they yield a considerable quantity of oxygen." — *Dreme, Der Virniss- u. Kittmacher*, &c. p. 15. The same writer elsewhere remarks: "The oil acquires a resinous quality by means of the oxide of zinc sooner than with the other metallic substances above mentioned, since the former parts with its oxygen, during the boiling, in greater quantity." — Ib. p. 26.

The following experiments, by another investigator, on the relative solubility, in oil, of zinc and lead dryers, corroborate the above observations : —

"Experiment 8. That [white] copperas does not combine with varnish, but only hardens it. — Three lb. of very fine African copal, one gallon of clarified oil, and two oz. of dried copperas were mixed off with two gallons of [essential oil of] turpentine, which, after being strained, had been put by in an open-mouthed jar for eight months. I then poured off all the varnish, not quite to the bottoms. I afterwards well washed the sediment left at the bottom of the jar with two quarts of warm turpentine, which I filtered through some very fine cambric muslin, and afterwards dried the copperas in the sun; it still weighed two oz. and appeared like what it nearly was, powder of zinc.

"Experiment 9. That sugar of lead does combine with varnish. — With the same quantity and quality of gum, oil, and turpentine, I made three gallons of copal varnish, introducing two oz. of dried sugar of lead during the boiling. I put it in a jar for eight months. I then poured off all the varnish, and

washed out the sediment with half a gallon of warm turpentine, filtered as before. I dried the residuum left on the muslin, which only weighed seven drachms, and appeared of a pearly lead colour; so that the varnish had abstracted the remainder." —*J. Wilson Neil, on the Manfacture of Varnishes: Transactions of the Society of Arts*, vol. xlix. part ii. p. 76.

These statements acquire a new interest from the fact (established by documents which have been adduced), that the method which such experiments warrant was really adopted in Flanders in the fifteenth century. As the use of oxides of lead, for dryers, was then familiar, there can be little doubt that the preference given to (dried or calcined) white copperas was not accidental, but rather the result of accurate experiments, such as Hubert van Eyck was qualified to undertake.

It is unnecessary to enter into the questions, on the one hand, whether such preference was a needless refinement; or, on the other, whether any siccative ingredient is necessary: it is sufficient to have shown that the least objectionable metallic oxide was used as a dryer by the earliest oil painters.

It has been stated on the authority of a modern writer*, and experience confirms the observation, that oil colours, if intimately mixed with aqueous particles, are slow in drying. The early oil painters did not put their colours in water; and the later Flemish artists kept white lead only in this way, finding that its colour was improved by it, and that it was slow to imbibe moisture. In such habits climate, no doubt, had its influence. The aqueous particles quickly evaporate in a warm atmosphere, when not thoroughly incorporated with the oil.† Nunez, indeed, recommends grinding white lead with

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* Fernbach, Die Oelmalerei, p. 74.

† It has been seen that, under certain circumstances, water may be brought in contact with boiling oil with good results. In some cases the water is decomposed in the operation. Thus, when it is desired to give the oil a resinous quality as soon as possible during the boiling, it is not unusual to sprinkle hot water (which is more divisible and lighter than cold) on the heated fluid. The water coming in contact

linseed oil and water together, chiefly with a view to bleach the oil: the passage has been already quoted (p. 362.). The Italian and Spanish painters commonly kept their colours under water. In the Treviso document before quoted we read of "small cups and a large vessel for the painters." * Cespedes explains the use of the latter.† Palomino, on the other hand, mentions four colours only — white, ochres, light red, and umber — which should be placed in water. The others, he remarks, "abhor water, as they part with oil and become hard in it;" (he might have included the ochres in the prohibited list, as they easily imbibe moisture). He recommends that such colours should be kept in small cups, covered with oiled paper; as was the practice with the Flemish painters in the fifteenth century.‡ The Bolognese painters were not so particular; they even placed their palettes with the colours on them under water. Malvasia relates that Alessandro Tiarini, having permitted a scholar to put his palette and colours into the same vessel of water with his own, was not a little provoked at finding that the tints had become mixed.§

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with the boiling oil in minute quantities becomes instantly decomposed; its oxygen combining with the oil, thereby rendering it more resinous, its hydrogen burning with a bright flame.

* "Per scudellini per li depentori, L. 1. s. 16. Per un cadin per depentori, L. 1. s."

† "Un ancho vaso de metal sonoro,
De frescas ondas transparentes lleno;
Do molidos á olio en blando frio
Del calor los defienda i del estio."

Quoted by Pacheco, Arte de Pintura, p. 396.

‡ El Museo Pictorico, tomo segundo, p. 54. Compare the passage before quoted from the Strassburg MS.

§ Felsina Pittrice, Bologna, 1678, vol. ii. p. 209.

CHAP. XI.

METHODS OF THE FLEMISH SCHOOL CONSIDERED GENERALLY.

The habits of the Flemish painters in regard to the choice and preparation of *vehicles* having been traced in the two preceding chapters by means of numerous records, it is now proposed, with the aid of similar evidence, to describe the ordinary practice of the school in other particulars. The principal points which remain to be considered are: the nature of the ground or substratum on which the picture was executed; the order of operations in the commencement of the picture itself; and such modes of preparing the colours as were, originally at least, peculiar to the artists of Flanders and Holland.

Perhaps the only technical process which has survived without change from remote antiquity is, the method of preparing grounds, on wood or other surfaces, for painting. The layer of chalk and size which is found under the colours of the Egyptian mummy-cases is nearly, if not precisely, the same as that employed by the painters of the middle

ages, and which is often used at the present day.* This preparation, whether the solid ingredient consist of washed chalk (whitening), or plaster of Paris † prepared in water and finely ground (called by the Italians "gesso marcio" ‡), is fittest for an inflexible surface, as it becomes brittle with age.

The Venetians, who from the first preferred cloth of fine texture as a groundwork for pictures, generally took the precaution of spreading the composition of size and gesso as thinly as possible, so as to avoid the danger of its cracking when the picture was rolled.§ Their practice in this parti-

* See Raspe, A critical Essay on Oil Painting, &c. p. 22. 25.

† Vasari, in his Life of Luca della Robbia, speaking of the stucco works by that sculptor at "Madri" near Paris, observes that the plaster of Paris is superior to that made from the gypsum of Volterra, "because it is soft when worked, but in time becomes hard." *Madri* probably means the palace built by Francis the First in the Bois de Boulogne, and which he called *Madrid.* See the *Lettere Pittoriche* (1757), vol. iv. p. 338.

‡ Gesso marcio, or marcito, is plaster of Paris first stirred well with water till it loses the power to *set*, and then kept and daily stirred for a month. (See Cennini, cap. 116.) A more exact receipt "ad faciendum gessum subtile" appears in the MSS. of Alcherius, copied from an Italian MS. of the 14th century. According to that description the gesso was at first sifted into the water, and the water was changed daily.

§ Van Mander relates that the elder Pourbus painted a landscape on a large cloth prepared with the white size-ground of the usual kind. The picture required to be frequently rolled and unrolled, probably while the artist was at work; the consequence was that the painted surface scaled off.

cular will be further described and exemplified in treating of the Italian methods.

It has been often asserted that Van Eyck painted on wood only: there is, indeed, but one recorded instance of his having used cloth.* Rubens inherited in this respect the predilections of the early Flemish masters: in one of his letters to Sir Dudley Carleton he observes that, for small works, wood is fittest.†

The mode of preparing the ground of panels was so uniform, that the directions of Cennini may be considered applicable to all contemporary schools. The habits of the Northern artists differed from those of the Italians in some few points only. The wood commonly employed by the latter was the white poplar‡: the Flemish painters used oak. Cennini (c. 113.) observes that, when the dimensions of the panel permit such an operation, the surest means of preventing its splitting is to boil it first. Time has shown that in larger works, composed of several pieces, the precautions adopted were seldom sufficient to guard against this accident, or to prevent warping: the mode of protecting the wood by battens, for example, is not always successful.§ The cement which was used by the early

* Morelli, Notizia d'Opere di Disegno, &c. p. 14.

† Carpenter, Pictorial Notices, &c. p. 161.

‡ Cennini, cap. 113. Compare Vasari, Vita di Jacopo, Giovanni, e Gentile Bellini.

§ See the note at the end of this chapter.

painters for their large panels, or *tavole*, was of the strongest kind, consisting of the insoluble part of cheese, ground with quicklime: the mode of preparing this glue, as described by Theophilus and others, has been often published.*

The archives of the Duomo at Treviso contain some curious documents relating to the principal altar-piece of that church — a picture once attributed to Sebastian del Piombo, but now known to be the work of Frà Marco Pensabene. The following items in the account have reference to the subject now under consideration: —

"7. March, 1520. To Mistro Benetto Marangon at the Duomo, for planks of good wood to make the panel for the figures of the great altar-piece, 14 soldi.

"To Mistro Lio, who made the panel, to buy cheese to make the glue for fastening the planks of the same, 1 soldo."

"13. October, 1521. To Mistro Zan, the gilder, (part of his account) for having laid the gesso ground on the altar-piece, 3 soldi." †

* Take soft cheese, cut it into small bits; pound and wash in a mortar with hot water till all the soluble parts are removed, and till the water, which requires to be frequently changed, remains clear. The cheese, thus prepared, will crumble like bread when dry, and may be kept in that state for any length of time. The substance itself is not soluble in water, but it becomes so by the addition of quicklime: on pounding it with this a viscous cream is formed, which may be thinned with water. It dries quickly, and once dry cannot be again dissolved.

† "Marzo 1520, a dì 7. Dati a Mistro Benetto Marangon

In large altar-pieces, necessarily composed of many pieces, it may be often remarked that each separate plank has become slightly convex in front: this is particularly observable in the picture of the Transfiguration by Raphael.* The heat of candles on altars is supposed to have been the cause of this not uncommon defect†; but heat, if con-

sta al Domo per tavole de talpon [toppo] per far tavolado per le figure della pala dell' altar grando, L. 14. s.

"Dati a Mistro Lio che facea la pala per comprar formajo per far la cola da incolar le tavole de dita pala, L. 1. s."

"A dì, 13. Ottobre. Item dati a Mistro Zan indorador per parte per aver inzesà [ingessato] la pala dell' altar grando, L. 3. s." — *Federigi, Memorie Trevigiane*, Venezia, 1803, vol. i. p. 130. Vasari relates that Paolo Uccello quitted a convent where he had been at work, because the monks fed him with nothing but cheese. He fled if he saw his employers in the streets, but being at last caught by two friars, who outran him, and being questioned as to the cause of his deserting them, he confessed that he was tired of their diet, adding, that he was afraid of being metamorphosed into cement. The expression proves how generally the glue above described was then in use. (*Vita de Paolo Uccello.*)

* The *tavola* on which this picture is painted is composed of five planks three or four inches thick. Richardson, who saw it in S. Pietro in Montorio, says that it is painted "on board or rather on timber, being, as I remember, at least a foot thick." (Vol. ii. p. 313.) He was perhaps deceived by the frame. It is remarkable, that in Titian's St. Sebastian, now in the Vatican, the planks of which the tavola is composed are placed horizontally, or parallel with the shorter sides of the picture; in consequence of which the joinings are numerous. The upper and lower portions of this work are treated as distinct compositions, which may account for this arrangement.

† Richardson, speaking of the St. Cecilia of Raphael, says

siderable, would rather produce the contrary appearance. It would seem that the layer of paint, with its substratum, slightly operates to prevent the wood from contracting or becoming concave, on that side; it might therefore be concluded that a similar protection at the back, by equalising the conditions, would tend to keep the wood flat. The oak panel on which the picture by Van Eyck in the National Gallery is painted is protected at the back by a composition of gesso, size, and tow, over which a coat of black oil-paint was passed. This, whether added when the picture was executed or subsequently, has tended to preserve the wood (which is not at all wormeaten), and perhaps to prevent its warping.*

The judicious practice here noticed was almost the only precaution which the Italians overlooked: in other respects, the directions of Cennini relating to the preparation of panels evince extreme care. He first remarks that, if there should be any appearance of grease on the surface, there is no remedy but to entirely plane away the stained parts. A wood like that of the fir, which might throw out unctuous exudations, was on this account an unsafe material. Instances in which it has been used are sometimes to be met with in early English speci-

that the surface of the picture, opposite the flame of the candles on the altar, was "perfectly fried." (Vol. ii. p. 34.)

* When this expedient is adopted, it is necessary that the coating should not be too firm, but of such a nature as to expand or contract with the wood.

mens, and the ground has become detached in consequence. The Florentine writer recommends that any traces of iron nails in the wood should be covered with small plates of tin-foil, to cut off all communication from the rust. The surface of the panel was not to be too smooth: it was prepared for the gesso ground by two or three coats of size; the first being thinner than the others, in order the more effectually to adhere to the wood.*

The panel was now covered with "gesso grosso," mixed with the stronger parchment size. The gesso was first washed and sifted, but not with the extreme care required for the preparation of the material in its second application: it was therefore called "grosso." This first coat was spread on the plane panel with a *stecca* (a wooden or horn scraper, such as is now used), and on the relieved or ornamented parts with a brush. When this was dry, and when the surface was reduced to sufficient smoothness by instruments adapted for the purpose, the finer gesso, mixed with the same size, was passed over the first preparation with a soft brush. Eight layers at least of this finer composition were applied, each successive layer being spread in a direction contrary to that of the previous one. Cennini observes that relieved ornaments did not require so thick a coat, but that in the plane por-

* Trattato, cap. 113. The strength of the size is also described with sufficient exactness.

tions of the panel (constituting the ground of the picture properly so called) the gesso could hardly be too thick.*

A ground so prepared, however safe while in dry situations, is obviously liable to be softened by moisture; and this is another reason why it is less fit for cloth, which without due precautions may be accessible to damp at the back. Even on wood, a ground of this description, though covered (on one side) with colours mixed with oil, was not always safe; and the porous nature of the white poplar, as compared with oak or chestnut, may partly account for this. Vasari relates that an altar-piece by Ridolfo Ghirlandajo having been placed in a room full of bundles of green broom (prepared for fascines during the siege of Florence), the damp occasioned by them softened the gesso ground, and the surface becoming detached the artist had to repaint the picture.† Another, by Perino del Vaga, formerly in the church of S. Maria sopra Minerva in Rome, having been for a time half under water during an inundation of the Tiber, suffered in the same manner. In the latter

* Trattato, cap. 117. There is either a misprint or an error of the transcriber in this chapter of Cennini; it occurs more than once. "In fogliami e altri rilievi si passa di meno; ma in panni non se ne può dare troppo." He is not speaking of draperies (panni), but of plane surfaces (piani), as opposed to the relieved ornaments. In cap. 115. the parallel passage is correct: "ne' piani non se ne può dare troppo."

† Vita di Ridolfo, David, e Benedetto Grillandai.

case, Vasari remarks that the wood had swollen.* The same writer gives, as a report only (e' dicono), the story of Raphael's Spasimo di Sicilia having floated from a wrecked vessel into the harbour of Genoa†; but, if the account be true, it is to be assumed that the edges and back of the picture were well protected by a hydrofuge coating of some kind. The wood, which is always thick in Raphael's altar-pieces, was probably chestnut: the picture, now in the Madrid Gallery, has been transferred to cloth.

There can be no doubt, that, when rendered inaccessible to damp on all sides, this ground would be durable under any circumstances: even cloth (not intended to be rolled), if covered with wax at the back, might be safely prepared with a size and gesso ground. Without such a protection, especially if the ground were thick, the ruin of the picture in a humid situation would be inevitable. De Mayerne states that a picture on cloth, by Abraham Latombe, having hung for several years against the damp wall of a church, the colour entirely separated, "à cause de la colle." He consequently recommends a priming with drying oil. It might indeed be inferred that if panels require to be protected at the

* Vita di Perino del Vaga. The picture (on wood) of Venus Anadyomene, by Apelles, preserved in Rome, in Pliny's time, was irreparably injured in the lower half; possibly from a similar cause. Plin. l. xxxv. c. 36.

† Vita di Raffaello. The picture was found "illesa e senza macchia o difetto alcuno."

back, cloth must need such a safeguard much more. The preservation of the cloth itself by means of tan may be also recommended, as its good results have been tested by long experience.*

It should be remembered, that a picture on cloth is more liable to change if it be thinly painted; as, under such circumstances, it is exposed to the action of air, damp, and even dust, on both sides. In old pictures executed in this manner, and which have not been lined, it may even be remarked, that, where the bars of the stretching-frame behind afford a greater protection to the cloth, the colours are in a fresher state; the difference, which is sometimes very marked, corresponding exactly with the form of the woodwork. So, when such a picture is varnished, the narrow portions of the surface thus protected bear out, while the rest of the picture soon presents a different appearance. Thus, supposing thin painting to be preferred (as it very generally was in the early Flemish school), pictures so executed were calculated to retain their freshness much longer on panel than on cloth.

To return to the preparation of the ground: when the coats of finer gesso were perfectly dry, the surface was again carefully scraped, till, to use the words of Cennini, it was as white as milk and as smooth as ivory. Upon this surface the design

* See, in the Sixth Report of the Commissioners on the Fine Arts, a communication from Mr. Hamlet Millett respecting a mode of rendering canvass durable by means of tan.

was traced from a drawing or cartoon*; the forms being afterwards fixed with a brownish ink, and shaded like a drawing. This was the mode of commencing a tempera picture; but the same process was followed without change, or rather with greater care, by the first oil painters. The following details, relating to the habits of the early Flemish and German masters, are recorded by Van Mander in his *Elements of Painting*.†

"Our predecessors [he afterwards names Van Eyck, Albert Durer, Lucas van Leyden, and (Peter) Brueghel] were in the habit of spreading the white ground over panels more thickly than we do: they then scraped the surface as smooth as possible. They also used cartoons, which they laid on the smooth fair white ground, and then sat down and traced them, first rubbing any dark [powder]

* Cennini does not speak of a cartoon; but recommends that the drawing should be first sketched on the white ground in charcoal, and then outlined in ink with a minever pencil; the shadows were washed in afterwards. Cap. 122.

† Den Grondt der Edel vry Schilder-Konst. Perhaps the two earliest poems on painting — this by Van Mander, and another by a Spanish writer, Cespedes — are for practical purposes the best. The Flemish author has repelled most readers by his antiquated language; and unfortunately the third edition of his *Lives of the Painters*, a somewhat free translation in modern Dutch, does not contain the work here referred to. Extracts only from the poem of Cespedes are printed in Pacheco's *Arte de Pintura:* the MS. probably exists at Cordova. On the merits of the work, see Cean Bermudez, *Diccionario*, &c.

over the back of the drawing. They then drew in the design, beautifully, with black chalk or pencil. But an excellent method, which some adopted, was to grind coal black finely in water; with this they drew in and shaded their designs with all possible care. They then delicately spread over the outline a thin priming through which every form was seen, the operation being calculated accordingly; and this priming was flesh-coloured."* The marginal heading to this passage is: "They drew their designs on the white ground, and then passed an oil-priming over them." †

A picture by Giovanni Bellini, in the Florence

* "Ons moderne Voorders voor henen plochten
Hun penneelen dicker als wy te witten,
En schaefdens' alsoo glat als sy wel mochten,
Ghebruyckten oock cartoenen, die sy brochten
Op dit effen schoon wit, en ginghen sitten
Dit doortrecken soo met eenich besmitten,
Van achter ghewreven, en trockent moykens
Daer nae met swarte krijkens oft potloykens.

"Maer t' fraeyste was dit, dat sommighe namen
Eenich sme-kool swart, al fijntgens ghewreven
Met water, jae trocken en diepten t' samen
Hun dinghen seer vlijtich naer het betamen:
Dan hebbenser aerdich over ghegheven
Een dunne primuersel, alwaer men even
Wel alles mocht doorsien, ghestelt voordachtich:
End' het primuersel was carnatiachtich."

Het Schilder-Boeck (1604), p. 47. verso.

† "Trocken hun dinghen op het wit, en primuerden daer olyachtich over."

Gallery, is thus drawn and shaded on a white ground, preparatory to its completion in oil colours. A Van Eyck, now in the Academy at Antwerp, representing St. Barbara, is in the same state; the sky only being coloured. Various unfinished pictures by Leonardo da Vinci, Frà Bartolommeo, and others, clearly exhibit the same process. A picture, so prepared, was in a certain sense a finished work; and this may account for so many examples of the kind having been preserved. Cennini's words, in reference to such productions, are remarkable: "E così ti rimarrà un disegno vago, che farai innamorato ogni uomo de' fatti tuoi." *

It is thus evident, as might indeed be reasonably inferred, that, in the first practice of oil painting, the habits of the Italian and Transalpine painters closely corresponded: but, while the Italians, as already noticed, gradually modified the process first adopted, the Flemish artists remained more constant to their traditional methods. The perfection of Van Eyck's technical system is even apparent in the works of Rubens, notwithstanding the vast difference of style between the two painters.

It has been seen that a transparent warm tint in oil (that is, an oleo-resinous medium†) was spread

* Cap. 122.

† It is to be remembered that in the early Flemish practice the medium, or vehicle, was always more or less oleo-resinous. The method partly survived in some Italian schools. Armenini

over the outline and white ground. The important question now arises: Was the ground absorbent or not? All writers on the technical processes of painting who have touched on this subject have followed each other in extolling the chalk or gesso grounds of the early painters; because such grounds, they assume, by absorbing the oil, removed in some degree the cause of yellowness in the colours, and thus insured the durability and freshness of the tints. This opinion, as regards the nature of the ground, is erroneous. It is true that the Venetians, when they painted on cloth, generally (but not always) spread so thin a coat of the white ground that the oil penetrated to the back of the picture. In proof of this it may be observed, before such pictures are lined, that the cloth is often embrowned as if it had undergone a slow combustion, and the principal forms and masses of the composition have stained through it. But in many cases even on cloth, and universally on wood, the early masters purposely prevented the absorption of the oil. The strength of the size mixed with the gesso was not of itself sufficient to prevent this; it was not desirable to have too firm a ground, since it was then liable to crack. When Vasari, speaking of a

recommends a flesh-coloured priming mixed with a certain proportion of common (sandarac) varnish; but, according to his directions, this priming was not transparent but solid, the outline being traced upon it. (*De' veri Precetti della Pittura*, in Ravenna, 1587, lib. ii. p. 125.)

picture on wood by Giovan Francesco Caroto, says that the gesso cracked "per essere mal stemperato," he probably means that the size was too firm.*

The question, whether the ground was absorbent or not, can be determined with certainty by the examination of pictures; but documentary evidence also is not wanting. The older oil pictures on wood have been subject to so many vicissitudes that it is very rare to find a surface which, either from the warping of the panel or from other accidents, is not more or less cracked; in consequence of which, small laminæ of paint sometimes become entirely detached from the ground. In all such cases, and however thin the painted film may be, the ground so exposed will be found perfectly white. Had it been absorbent it would have been yellow, if not brown, with oil.

But there is a still more decisive mode of settling this question by a sort of "experimentum crucis." Pictures are sometimes transferred from panel to cloth. The front being secured by smooth paper or linen, the picture is laid on its face and the wood is gradually planed and scraped away. At last the ground appears; first, the "gesso grosso," then, next the painted surface, the "gesso sottile." On scraping this it is found that it is whitest immediately next the colours; for on the inner side it may sometimes have received slight stains from the wood, if

* Vita di Frà Giocondo ed altri.

the latter was not first sized. When a picture which happens to be much cracked has been oiled or varnished, the fluid will sometimes penetrate through the cracks into the ground, which in such parts had become accessible. In that case the white ground is stained in lines only, corresponding in their direction with the cracks of the picture. This last circumstance also proves that the ground was not sufficiently hard in itself to prevent the absorption of oil.

Accordingly, it required to be rendered non-absorbent by a coating of size; and this was passed *over* the outline, before the oil-priming was applied. Cennini, speaking of painting in oil on walls, says: "Draw your subject with charcoal, and fix the design either with ink or with verdaccio [a dull green] duly tempered. Then take a little size well diluted . . . and, either with a sponge or with a soft and broad brush, pass it once over all the surface to be painted; and leave it to dry at least for a day."* Elsewhere: "How to paint in oil on iron, on panel, or on stone. And in the same manner paint on iron, or every stone surface, every panel; always giving a coat of size first."†

* "Poi disegna con carbone la tua storia, e fermala o con inchiostro o con verdaccio temperato. Poi abbia un poco di colla bene inacquata. . . . . Poi, o vuoi con ispugna o vuoi col pennello morbido e mozzetto, daine una volta per tutto 'l campo che hai a lavorare; e lascialo asciugare almen per un dì."—Cap. 90.

† "Come dei lavorare ad olio in ferro, in tavola, in pietra.

Vasari is equally conclusive, although his directions relate to a more modern, and in some respects, a degenerate practice. He says: "Having covered the panels with a gesso ground, they scrape the surface, and, having given four or five coats of very thin size with a sponge, they proceed to grind their colours with nut or linseed oil (although nut oil is better, because it yellows less)."* He then directs that a dusky mixture of colours (not to be recommended) should be spread over this sized ground. We have here an instance of a traditional process surviving the motive which gave rise to it. There was obviously no reason for protecting the white ground in this case, as it was to be entirely shut out by the thick priming. The absorption of the oil was effectually, and it would seem needlessly, prevented; but Vasari, in describing this process, unconsciously records the earlier method. The outline, he proceeds to say, might be drawn either with charcoal or with white chalk on the dark priming.

Palomino, who notices the mode in which the early masters prepared their panels, is no less clear on the point in question. After describing the

E per lo simile in ferro lavora, e ogni pietra, ogni tavola, incollando sempre prima;" &c. — Cap. 94.

* "Ingessato che hanno le tavole o quadri, gli radono, e, datovi di dolcissima colla quattro o cinque mani con una spugna, vanno poi macinando i colori con olio di noce o di seme di lino (benchè il noce è meglio, perchè ingialla meno)," &c. — *Introduzione*, cap. 21.

application of the two kinds of gesso ("yeso pardo" and "yeso mate") he says: "At last, having made the surface very smooth, they gave it a coat of size, and, after that, one or two of the oil-priming." *

Van Mander, in the description above quoted, omits to mention the size (not only as applied over the outline, but over the wood before the gesso was spread); but he indirectly alludes to it in another passage, where he speaks of the difficulty of using smalt. The effect of this colour is much injured by its sinking in the oil, and various contrivances have been resorted to, in all schools, to remove the superfluous fluid. Some of these contrivances are enumerated by the Flemish writer. He observes: "On this account some prick the panel with needles; some blow blotting paper close upon the surface, suffering it to remain for a time, so as to absorb the oil; some paint with poppy oil, and others, for the same purpose, use prepared [bleached] oils." †

* "Y últimamente lixandola despues con lixa muy suave y usada, darle una mano de cola de retazo, y despues de ella, una ó dos de imprimacion á el olio."—*El Museo Pictorico*, tomo segundo, p. 49.

† "De Smalten behoeven wel in te schieten,
Hierom eenighe prickelen met naelden
Dicht hun penneelen, om sulx te ghenieten,
Sommighe bliesen cladtpapier, en lieten
Die daer op ligghen, waer mede sy haelden
D'oly daer uyt, en eenigh' ander maelden
Met Heulsaeds oly, ander van ghelijcken
Ghebruycken oly ghemaeckt met practijcken."
Het Schilder-Boeck, p. 50.

The object was to prevent the alteration of the smalt, either by removing the superfluous oil or by using it in as colourless a state as possible. The first remedy noticed, that of pricking the ground, shows, first, that the surface was, in its ordinary state, impermeable to the oil, and, secondly, that when that surface was perforated the ground within could absorb the fluid. The ground was, therefore, coated with size.

Thus the warm transparent oil priming, which Van Mander says was spread over the outline, left the sized white ground unstained. Had the ground been absorbent, it would have ceased to be white. It was an object with the early Flemish masters to preserve its splendour unimpaired. Many of them, like the Van Eycks, were glass-painters*: they knew the value of light behind colours. Not only in stained glass, but in the "translucid painting" of the middle ages (in which method colours derived effect from being glazed over sheets of metal foil), they were accustomed to the brilliant effect of internal light. The method of these inventors of the art, as regards the gesso preparation and its use, was still followed by Rubens and the painters of his time, when (as was generally the case) they

* See in Houbraken (*De Groote Schouburgh der Nederlantsche Konstschilders,* Amsterdam, 1718, vol. i. p. 15.) a list of painters of this school who were also glass-painters, from Lucas van Leyden to the father of Vandyck.

employed white grounds. The picture of the Judgment of Paris, by Rubens, in the National Gallery, is an example; it is painted on a perfectly white gesso ground, which must have been first sized, for there are sufficient indications that its brightness was unstained with oil. The thin painting of the early Flemish masters (a system preserved even by their successors in the treatment of shadows) was thus calculated on the effect of the white ground within it; and such a system being once adopted, the solidity of wood was essential to the durability of their tints.

It will now be apparent, that, if any portion of a picture, begun in the mode described, was executed in tempera, it must have been so prepared before the oil priming was applied. It is indeed very probable, that the reddish (carnatiachtich) priming with an oleo-resinous vehicle, which was passed over the finished design, was a vestige of the old practice of covering tempera pictures with a varnish of a similar tint*, the difference being that the tempera was now a light chiaroscuro painting only, which was still to receive its rich shadows and colours, and to be completed with an oleo-resinous vehicle. The

* The indirect evidence afforded by Armenini (lib. ii.) on this point is remarkable. Speaking of a priming for oil pictures, he observes that it was a flesh-tint inclining to flame colour in consequence of the immixture of (common) varnish with it. The warm tint of the customary sandarac varnish has been before noticed.

Flemish historian naturally records these operations as original methods; but, in comparing them with the history of the art which has now been traced, they will appear only as connecting links with a previous practice. Descamps observes that the pictures by Memling in the Hospital of St. John at Bruges are in tempera.* This was, perhaps, a gratuitous assertion, as it is unsupported by any known authority; but, if it have any foundation, it is to be assumed that the design, which, according to custom, was completed before the oil-priming was added, was carried further than usual, so as to amount to a tempera preparation.

The light warm tint which Van Mander assumes to have been generally used in the oil-priming was sometimes omitted, as unfinished pictures prove. Under such circumstances, the picture may have been executed at once on the sized outline. In the works of Lucas van Leyden, and sometimes in those of Albert Durer, the thin yet brilliant lights exhibit a still brighter ground underneath. Again, in a later practice, the colour of the preparation was by no means restricted to a flesh-tint.

The priming being quite dry (for, if it was not, the superadded colours would sink in), the shadows were painted in with a rich transparent brown mixed with a somewhat thick oleo-resinous vehicle of the firmer kind before described. The outlines

* La Vie des Peintres Flamands, &c., tome i. p. 14, 15.

of the lighter parts were not necessarily repeated, since the drawing underneath exhibited all the forms: the minuter darks, though executed with a thinner vehicle, still had the effect of rendering such shades more prominent than the lights. The painters of the sixteenth century often followed the process of the earlier masters in this respect.*

Those of the later artists who drew in their composition (without the previous sketch underneath) on the oil priming, diluted the brown outline colour accordingly. Van Mander observes: "There are others who, having with great pains and study collected sketches and drawings in abundance, combine them in their work, and produce a clean and distinct outline from such materials, according to the design which they have conceived. They either make this outline on the priming, with a single colour, thinly tempered, which can flow readily, or draw it with a dry point, leaving it in a clean state." † The original method was, perhaps, never entirely

* Compare Van Mander, Het Schilder-Boeck, p. 254. 298.

† "Ander zijnder, die met veel moeyten swaerlijck
Wt schetsen oft teyckeninghen met hoopen
Hun dinghen te samen rapen eenpaerlijck,
En teyckenen daer nae suyver en claerlijck,
Volcoomlijck wat sy in den sin beknoopen,
Op t' primuersel, met een verwe, die loopen
Can, dunne ghetempert, oft treckent netlijck
Met Potloot, en vaghent reyn onbesmetlijck."

Het Schilder-Boeck, p. 47.

laid aside: a light sketch, under the size, would serve as a guide for the brown outline, which was freely drawn upon the priming.

When the transparent brown shadows were added throughout the work, in the mode described, the half-tints being also more or less indicated by the same means, the work was tolerably complete as to its chiaroscuro. Examples of pictures in this state are common; but, according to the earlier and often-revived process, as the solid or opaque portions of the work were executed at once, and consequently in parts, so the shadows, though always painted first, were, in like manner, inserted as the work proceeded. Care was taken not to disturb the transparency of the darker shadows by the unnecessary immixture of opaque pigments, and the bright ground was preserved under the lights by not loading them. The vehicle for the light pigments was thinner than that used for the shadows. This, it is repeated, is evident from the fact, that the shadows, in the early Flemish works, are uniformly more raised than the lights.*

The habits of the first oil painters were in many circumstances influenced by the practice of tempera. It has been stated that portions were finished at a time, the ground being left untouched elsewhere.

* Michiels (*Histoire de la Peinture Flamande*, &c., vol. ii. p. 145.) speaks of a picture by Margaret Van Eyck, "où les carnations ayant été peintes très légèrement, les autres parties du tableau forment saillie."

That this was partly derived from the older habit may appear from the observation of Cennini, who, speaking of tempera, directs that the heads should be finished last. Such portions thus remained, for a time, light spots, while the rest of the picture was completed. Whatever parts were first begun by the oil painters (and it appears that they did not reserve the flesh for the last), the ground was, in this manner, left untouched in many places, while other portions were completed. Thus the unfinished Leonardo da Vinci in the Gallery at Milan has some parts — among others the head of the Virgin — nearly completed, while a mass of drapery, the lamb, and some of the background, remain carefully outlined (apparently traced) on a white ground.

The process of the early Flemish oil painters was, in this respect, the same. Van Mander writes: "When this [the priming] was dry, they saw their design distinctly through it, already half-completed. Upon this they proceeded carefully to lay all [the shadows and tints], executing the work with extraordinary care and attention. They did not load the colour, but used it thin and sparingly, in order that the tints might be clear and glowing [by showing the light ground through them]."* The marginal heading to this passage is: "They mostly finished their works at

* "Als dit nu droogh was, saghen sy hun dinghen
Schier daer half geschildert voor ooghen claerlijck,

once."* In another such heading we read: "Each colour, in order not to fade, is to be put in its place at once."†

In his account of Jeronimus Bos (a later painter, who, perhaps from often treating fantastic subjects, had a freer hand), the same writer says: "He had a firm, rapid, and very agreeable execution, often finishing his works at the first painting; yet those works have stood perfectly well, and without changing. Like other old masters he had a mode of drawing and tracing his subjects on the white panel; he then passed a transparent flesh-coloured priming over the design, often suffering the ground to contribute to the effect of his work."‡ In his account of Jan de Hollander, a painter of the six-

> Waer op sy alles net aenlegghen ginghen,
> En ten eersten op doen, met sonderlinghen
> Arbeydt en vlijt, en de verwe niet swaerlijck
> Daer op verladende, maer dun en spaerlijck,
> Seer edelijck gheleyt, gloeyend' en reyntgens,
> Met wit hayrkens aerdich ghetrocken cleyntgens."
>
> *Het Schilder-Boeck*, p. 48.

* "Deden hun dinghen veel ten eerstē op." — Ib.

† "Elcke verwe van eerst op haer plaets legghen, om niet verstervē." — Ib. p. 47.

‡ "Hy hadde een vaste en seer verdighe en aerdighe handelinghe, doende veel zijn dinghen ten eersten op, het welck nochtans sonder veranderen seer schoon blijft. Hy hadde oock als meer ander oude Meesters de maniere zijn dinghen te teeckenen en trecken op het wit der Penneelen, en daer over een doorschijnigh carnatiachtigh primuersel te legghen, en liet oock dickwils de gronden mede werckē." — Ib. p. 216. verso.

teenth century, the biographer remarks: "He was in the habit of making the ground of his panel or cloth tell, by painting loosely over it; a method which [Peter] Breughel imitated in a peculiar manner."* Again, speaking of an elaborate altar-piece, by Peter Aartsen, which was destroyed by the iconoclasts, Van Mander says: "The cartoon — as large as the painting itself — is still at Amsterdam. This [altar-piece] was an excellent work, handled in a masterly and manly style; the flesh, as well as some other parts, being mostly finished at once on the outline; and the whole was so judiciously executed that at a distance (whence the work required to be viewed) the effect was extremely powerful."†

These passages are sufficient to show that the

* "Veel had hy oock de manier van al swadderende op de Penneelen oft doecken de gronden mede te laten spelen, het welck Brueghel seer eyghentlijck nae volghde." — *Het Schilder-Boeck*, p. 215.

† "Van de Tafel is noch den Carton, so groot als t' werck is geweest, tot Amsterdam: het is geweest een uytgenomen heerlijck werck, meesterlijck en manlijck aenghetast, de naeckten en anders veel ten eersten op de teyckeninghe opgedaen wesende, en soo aendachtig, dat het van verre (ghelijck het uyt der ooghe most staen) hadde eenen uytnemenden grooten welstandt." — Ib. p. 244.

Van Mander mentions other works by this painter which were destroyed by the Protestant iconoclasts; and the editor of the third edition of the *Schilder-Boeck* adds that a large altar-piece by Aartsen, originally at Warmenhuizen in North Holland, representing the Crucifixion, was, in 1566, "hewn in pieces with axes by the senseless peasants," though a lady of Alkmaar offered a large sum to save it.

practice of finishing at once on the prepared outline was by no means uncommon even with the earlier masters. When, therefore, Van Mander speaks of the dead colour (dootverwe) of Van Eyck, he probably means the chiaroscuro preparation, which, whether a shaded drawing on the white ground or a tempera painting, was executed on the panel before the size and priming were added. He observes: "His [Van Eyck's] dead colourings were cleaner and sharper than the finished works of other painters, and I remember to have seen, in the house of my master Lucas de Heere, at Ghent, a portrait of a female, with a landscape behind, which was dead-coloured only, but yet very neatly and evenly executed."* As regards the subject, this description nearly corresponds with the chiaroscuro picture of St. Barbara above mentioned, in the Antwerp Gallery. There can be no doubt that the term "dead colour" was afterwards applied, as it now is, to pictures prepared, indeed, with colours, but without their full vivacity; at an earlier period, however, it seems that the expression was understood more literally, and that it was applied to works executed almost in chiaroscuro.

* "Sijn dootverwe was veel suyverder en scherper gedaen als ander Meesters opghedaen dinghen wesen mochten, alsoo my wel voorstaet dat ick een cleen conterfeytselken van een Vrouw-mensch van hem hebbe ghesien, met een Landtschapken achter, dat maer gedootverwet was, en nochtans seer uytnemende net en glat, en was ten huyse van mijn meester, Lucas de Heere, te Gent." — *Het Schilder-Boeck*, p. 202.

For the rest, the above extracts, corroborated as they are by other accounts and by existing works, establish with certainty the preparatory methods of the early Flemish painters. The claims of Van Mander himself, as a competent judge of art, are not to be overlooked. The biographer was born at Meulbeek in 1548, and died in 1606 at Amsterdam, having settled in Holland to avoid the troubles in his own country.* His work was published in 1604. He studied painting first under Lucas de Heere, and then under Peter Vlieric, whom he quitted in 1569: he afterwards visited Italy, where he remained nearly three years. His professional life and experience thus belong to the sixteenth century. He was evidently well acquainted with the works of those whose merit he records, and his evidence on the technical processes which he describes is unquestionably valuable. That evidence strictly relates to the early Flemish school. He had ceased to live before the younger Teniers was born, and he appears to have known nothing of Rubens, since he makes no mention of the great painter in the biography of Otho Venius, nor in a short notice of Adam van Oort, with both of whom Rubens studied.† His

* See his romantic history at the end of the second edition of the *Schilder-Boeck*, Amsterdam, 1618. The principal events are detailed in Johanna Schopenhauer's *Johann Van Eyck und seine Nachfolger*, Frankfurt a. M. 1822, vol. ii. p. 180.

† Rubens was twenty-seven when Van Mander's work was

testimony respecting the methods of the Netherlands school is therefore quite independent of the authority which those methods derived from the works and influence of Rubens.

In reviewing the statements of this important witness, and in further consulting his biographies, it is impossible not to be struck with the great attention to drawing which the Flemish process required. When the habit of making cartoons for oil pictures was nearly obsolete in Italy, it was still considered indispensable in Flanders and Holland. Peter Aartsen, a painter before mentioned among those who often finished their works at once, left twenty-five cartoons, from which many altar-pieces had been executed.* Van Mander's frequent mention of designs, some of which were on a large scale, shows that the early practice of deciding every thing before the picture was begun was still common in his time. The mannerism which prevailed in the latter part of the sixteenth century did not affect the technical habits of the school. Spranger and (Henry) Goltzius made finished drawings as preparations for pictures, and the biographer observes that those designers were

published; his absence in Italy may account for the silence of the biographer. It would seem, however, that at the age of twenty-three, when he quitted Flanders on his travels, he had made no great impression.

* Het Schilder-Boeck, p. 244.

unsurpassed in the management of the pen.* The precision required in smaller works had recommended that instrument to the earlier masters, and the transition to etching and engraving, as in the instance of Lucas van Leyden and others, is thus explained. De Bie, in a general description of the preparatory studies of the Flemish painters, alludes to the use of the pen in drawing, as no less familiar than that of the portcrayon.†

It thus appears that the method proposed by the inventors of oil painting, of preserving light within the colours, involved a certain order of processes. The principal conditions were: first, that the outline should be completed on the panel before the painting, properly so called, was begun. The object, in thus defining the forms, was to avoid alterations and repaintings, which might ultimately render the ground useless without supplying its place. Another condition was to avoid loading the opaque colours. This limitation was not essential with regard to the transparent colours, as such could hardly exclude the bright ground: their prominence in comparison with the lights was,

* Het Schilder-Boeck, p. 273. verso, p. 285. Van Mander remarks that Goltzius used the pen even on cloths primed for oil painting.

† "Leert reuselen met cryt, leert mette penne trecken."—*Het Gulden Cabinet*, tot Lier, 1661, p. 29. Compare p. 195. Hoogstraten also observes that, for giving precision and force to drawings, the pen is the fittest instrument. (*Inleyding tot de Hooge Schoole der Schilderkonst*, tot Rotterdam, 1678, p. 31.)

however, partly the consequence of their being applied with a thick but lucid vehicle. Another consequence of this process was, that tints were mixed to the local hues required. This method (which is indispensable in fresco and tempera painting) may have been continued partly from mere habit.* Cennini gives the same directions for mixing tints in oil as in tempera.†

The practice of using compound tints has not been approved by colourists‡; the method, as introduced by the early masters, was adapted to certain conditions, but, like many of their processes, was afterwards misapplied. Vasari informs us that Lorenzo di Credi, whose exaggerated nicety in technical details almost equalled that of Gerard Dow, was in the habit of mixing about thirty tints before he began to work.§ The opposite extreme

* Van Mander takes occasion to remark that the practice of fresco painters in mixing tints is no less convenient for oil painters. (*Het Schilder-Boeck*, p. 31.) The marginal heading to the passage referred to is: "The mixing of tints is no loss of time but is very useful." "T' verwen tēperen is geen tijdt-verlies maer is seer voorderlijck."

† Trattato, cap. 113.

‡ Compare Reynolds, notes on Du Fresnoy's *Art of Painting*, note xxxvii. Wilson, happening to pay a visit to George Lambert, the landscape-painter, noticed the manner in which that artist's palette was prepared; he afterwards observed to a friend, that the cow and the hay to be eaten by the animal were already visible among Lambert's prepared tints. The anecdote was related by Sir George Beaumont.

§ Vita di Lorenzo di Credi.

is perhaps no less objectionable.* Much may depend on the skilful use of the ground. The purest colour in an opaque state and superficially light only, is less brilliant than the foulest mixture through which light shines. Hence, as long as the white ground was visible within the tints, the habit of matching colours from nature (no matter by what complication of hues, provided the ingredients were not chemically injurious to each other) was likely to combine the truth of negative hues with clearness. Such a method would succeed best where the local colour, however neutral, was but little diversified; as in draperies and similar substances. But in flesh, which, strictly speaking, has no local colour, this mode of matching the hues of nature is less possible: it is still more difficult as regards the shadows. Accordingly, it is in delicate carnations that Van Eyck is least successful; the shadows especially are not always true: but in the imitation of darker complexions and the colours of inanimate objects, a vivid reality was often attained by such means.

Inquiries respecting the implements used by the early painters can, generally, possess little interest except for the antiquary; there are cases, however, where such investigations may illustrate the habits of those painters with regard to their style of

* "But if you imagine you can make a pallett of the picture, to make mixtures theare, you will make madd work." — *Harleian MS.* No. 2337. supposed to be written by Riley.

colouring. Strange as it must now seem, all evidence hitherto brought to light tends to prove that the painter's palette was not in use in the beginning of the fifteenth century. Cennini, who is most minute in his descriptions, does not mention it; nor does there appear to be any allusion to it in medieval writers. But if it was not in use in its present form, it may still be supposed that a tablet was at hand which answered the same purpose, or on which the colours were tried.*

The tints required for the portion of work in hand were placed in small cups. The ancient artists in encaustic used shells for this purpose†,

* It would appear, from a passage in Van Mander, that fresco painters still used "tablets and boards" when oil painters used "palettes."

"In sulcker manier, als op seker Wetten,
Bereyden haer tavelotsen, oft borden,
Die op't natte calck haer te wercken setten,
Ende d' olyverwers op haer palletten."

Het Schilder-Boeck, p. 31.

Palomino remarks that the larger palettes (for oil painting) were not held in the hand, but were fastened on stools beside the painter. (*El Museo*, &c. tom. ii. p. 40.) De Mayerne (*MS.* p. 145. verso) uses the expression, "palette à poignée," thus distinguishing the smaller implement.

Vasari's word, *tavolella* (palette), it will be remembered, is the diminutive of *tavola ;* and *paleta* (a word used by the Venetians for a small altar-piece) stands in the same relation to *pala.*

† "Pictoris instrumento legato, ceræ, colores, similiaque horum legato cedunt: item peniculi, cauteria, et conchæ."—*Martianus*, lib. xvii.; quoted by Wiegman, *Die Malerei der Alten.*

and the Byzantine painters continued the practice. A copy of a drawing, supposed to be of the ninth century, representing St. Luke painting the Virgin, is published in Ottley's *Italian School of Design*. The artist holds a brush in one hand and a small shell in the other. In the MSS. of Alcherius colours are mixed in shells. In the Venetian manuscript *caparoze* (shells) are repeatedly mentioned in reference to the same purpose. They were commonly used by the Spanish oil painters*, and were employed in miniature-painting in the seventeenth century†: the practice in that art is, even now, not altogether obsolete.‡ The more liquid colours of the fresco and tempera painters

* Cespedes, in his poem before mentioned, says :

" Sea argentada concha, do el tesoro,
Crecio del mar, en el extremo seno,
La que guarde el carmin, i guarde el oro,
El verde, el blanco, i el azul sereno."

Quoted by Pacheco, *Arte de Pintura*, p. 369.

† De Mayerne alludes to this habit in speaking of Huskins (Hoskins) the miniature-painter. He also mentions "pots ou coquilles," in which the colours of tempera painters were kept.

‡ In oil painting the tradition does not appear to have survived the 17th century. Norgate, in a MS. (to be hereafter noticed) on "Limning" and oil painting, written about the year 1634, observes, in his directions for the latter: "You must have shells allsoe to put your colours in after they be ground, with tinfoil to cover them," &c. Wilson had probably no intention of imitating the ancients, when he mixed his *meguilp* in an oyster shell. See Wright, Some Account of the Life of Richard Wilson, Esq. R. A., London, 1824, p. 20.

required less shallow vessels: these are called *vaselli*, *vasellini*, and *alberelli*, by Cennini and Vasari; and *scudellini* by other writers. The contrivances for keeping them at hand were sometimes curious. Vasari, speaking of Aspertini of Bologna, ridicules his habit of painting with a girdle round him stuck with small pots of colour.*

Those who are curious to trace the history of painters' implements, and particularly of the palette, might compare the numerous representations of St. Luke painting the Virgin. In Van Eyck's picture of this scene, the patron of the art is making a drawing only; he has no colours at hand. Such was the mode in which the Flemish artist himself would study a portrait intended to be painted. Raphael, in treating the same subject, has placed a vasellino in the Saint's left hand: he may have done so from a desire to follow the older representations: the circumstance cannot, in this instance, be considered as evidence that the painters of the time (and the picture is not an early work of the master) did not use the palette. In the "Hortulus Anime," printed at Nuremberg in 1519, St. Luke holds the modern implement. In later

* "Ma quello che era più bello e da ridere si è, che stando cinto, aveva intorno intorno piena la correggia di pignatti pieni di colori temperati, di modo che pareva il diavolo di S. Macario con quelle sue tante ampolle; e quando lavorava con gli occhiali al naso, arebbe fatto ridere i sassi." — *Vita di Bagnacavallo.*

representations of the sixteenth century, the only remarkable circumstance is the diminutive size of the palette. This is no less striking in some of the portraits of artists accompanying the eulogies of Lampsonius.* The habit is perhaps to be traced to the practice of finishing portions of a picture at once (for which few tints would be required), a practice which, as above shown, was at first common: it also indicates a previous preparation of the tints. Later painters, who adopted a freer system, appear to have had no resource but either to use several palettes, and, like Guido, to change them often, or to keep the larger implement, described by Palomino, beside them.†

For a considerable period after the introduction of the improved oil painting, colours were kept in a dry state, and were mixed with the vehicle, in the quantity required, immediately before they were used. They were ground, as has been seen, in a

* Elogia in Effigies Pictorum celebrium Germaniæ inferioris. Antw., 1572.

† Malvasia, Felsina Pittrice, vol. ii. p. 64. Ridolfi (*Le Maraviglie dell' Arte*, vol. i. p. 49.), in gratuitously stating that Antonello da Messina was observed by Giovanni Bellini to dip his brush occasionally in linseed oil, at least described the habit of his own time. Others employed an essential oil for the same purpose. In the latter practice (which was common in the 16th and 17th centuries) the earlier masters may have thought that there was a danger of diluting the pigments unequally, and of not preserving a homogeneous surface. Their tints were prepared in the precise state in which they were to be applied.

pure drying oil; afterwards, a few drops of varnish were added to each tint, the quality of the varnish being varied according to the nature of the colour. The earliest notices of oil colours being kept in bladders occur in English treatises. It would seem that the frequent visits of Dutch and Flemish painters to this country suggested the mode of carrying prepared pigments in a convenient form: itinerant portrait-painters, especially, could, by such a contrivance, be more quickly prepared when their services were required.* The modern practice of keeping colours in this state has been necessarily influenced by views altogether different from those which would guide painters. The colour merchant prepared such materials so that they should not spoil on his hands; in other

* "I remember I had a parcel of colours given me in the year 1661, by a neighbouring yeoman, that were, as he said, left at his house by a trooper that quartered there in the time of the wars, about the year 1644. This man was by profession a picture-drawer, and his colours were all tyed up in bladders according to the method before prescribed," &c. — *Smith's Art of Painting in Oyl*, (5th edition, 1723) p. 4.

Palomino, whose *Museo Pictorico* was first published in 1715, communicates the method of tying colours in bladders as a new discovery. "Modo curioso de conservar los colores molidos á el olio," &c. vol. ii. p. 54. The necessity of moistening the pieces of bladder in water before the colour is placed in them may be mentioned among the objections to this practice. Metal tubes, although they may partially affect some tints, are on the whole preferable. See a paper by Mr. Linton in the *Sixth Report of the Commissioners on the Fine Arts*, p. 24. note.

words, so that they should not easily dry. The early painters, on the contrary, ground or mixed their colours in vehicles of different drying tendencies according to the nature of the pigment; and as the small quantity required was prepared for the occasion only, or was to last but a short time, the spoiling even of a certain portion would be of no consequence. The habits of the older masters, in the preparation of colours and in the mode of using certain pigments, will be further illustrated in the next Chapter.

The leading methods which have been described differ in many respects from those of the Italian, and, in some, from those of the later Flemish masters. Painters of all schools have, indeed, recognised the principle that colours derive brilliancy from light within them; but it was soon found that this object could be attained by various means. It matters not, for example, whether the internal brightness reside in the light ground, or whether it be reproduced at any stage of the work. A preparation of the latter description, answering the same end as the white panel, may consist in a light but very solid painting, by means of which the composition may be defined; and, when such a preparation is thickly painted, the colour of the ground underneath it is obviously unimportant. This conviction may have led to the introduction of dusky grounds; but the indispensable condition of a solid and lighter covering upon such a priming

was gradually overlooked: some later Italian pictures exhibit the thin painting of the older Flemish masters on grounds requiring a contrary treatment, and premature decay has been uniformly the consequence. The opposite precaution, though apparently needless, is to be recommended; viz. that of employing a light ground, even when the picture is intended to be solidly painted. This was often Rembrandt's practice: it indicates his having reckoned on the possibility, at least, of leaving his ground; accordingly it is sometimes apparent even in those of his pictures which are (partially) loaded with colour.

It is evident that if cloth be employed instead of wood, and if the ground or preparation be thin, the colours constituting the picture or its substratum require to be applied in considerable body, in order to exclude air or damp from the back. The bad consequences of a neglect of this have been already noticed. There is thus a plain reason for solid painting on cloth, which is not applicable to panels; and, as the Venetian oil painters happened to prefer cloth from the first, their whole process was soon influenced by this circumstance, and differed widely in its means, though not in its end, from that of the Flemish masters.

When Rubens remarked that wood was preferable for small pictures, he may, therefore, have meant that the solidity which is indispensable for works executed on cloth may be too apparent,

since small pictures can only be seen near. This and other principles of the kind, founded on a not unreasonable attention to the impressions of the ordinary spectator, were, however, set at nought by those who, like Rembrandt, considered art as an acknowledged convention, and who thought it at least unnecessary to conceal its means. It is also to be remembered, that, if a certain smoothness of surface be desired at last, the substance required may be furnished by a sufficiently thick ground (such as Armenini describes); the solidity of the picture, properly so called, is then not so essential.

It was observed that the system of colouring adopted by the Van Eycks may have been influenced by the practice of glass-painting. They appear, in their first efforts at least, to have considered the white panel as representing light behind a coloured and transparent medium, and aimed at giving brilliancy to their tints by allowing the white ground to shine through them. If those painters and their followers erred, it was in sometimes too literally carrying out this principle. Their lights are always transparent (mere white excepted) and their shadows sometimes want depth. This is in accordance with the effect of glass-staining, in which transparency may cease with darkness but never with light. The superior method of Rubens consisted in preserving transparency chiefly in his darks, and in contrasting their lucid

depth with solid lights. Shadows produced in the mode of Rubens and Teniers are already, strictly speaking, glazed, a transparent colour being passed over a light ground to produce them. The ultimate glazings of the Italian schools were, therefore, less necessary in the Flemish process, and, accordingly, were seldom employed. They could, indeed, only be required for the lights; and Rubens, in many instances, seems to have calculated on the effects of time, as sufficient for this object. He may have thought that the quality of depth, though desirable throughout a picture, should at all times be most apparent in shadows; and that this, their distinguishing attribute, would be less effective if the lights were treated on the same principle. The crudeness of bright pigments may undoubtedly be toned, to a certain extent, by the film which accumulates with age, to say nothing of the effect of varnishes; but, where transparency (no matter how produced) is wanting, in any degree, in shadows, time rather increases the defect.*

* The proverb of the Italians, "il Tempo dipinge," is to be understood chiefly of the tone which solid lights may acquire. A critic of the last century, dwelling on the qualities which time cannot confer, observes: "Ricordatevi almeno, che se il Tempo dipinge, non ha mai disegnato." — *Lettere Pittoriche* (Milano, 1822), vol. vii. p. 339.

The good effects of time on pictures may be said to belong to the painter's intention, and should be respected accordingly. In cases where it might even be historically certain that a picture had not been originally glazed, yet, as the painter

It is unnecessary to advert to the more striking imperfections commonly noticed in the works of Van Eyck; the meagreness in some of his forms, his occasional hardness, and his want of reflections: they were obviated in a great measure in his latter works, and perhaps, as regards the execution, there does not exist a finer specimen of his powers than the picture by him in the National Gallery. One defect, however, he avoided (and the same may be said of the minutest finishers among the Dutch painters), a defect from which modern artists of all schools are by no means free. When Vasari, in dwelling on the advantages of oil painting, observed that tempera was executed with the point of the brush, he meant to stigmatise the greatest defect of the latter process, viz. the hatched and stippled appearance which betrays the labour of the hand, and reduces painting (in respect to its execution) to a seemingly mechanical operation. If this was looked upon as a defect in tempera, it was likely to be considered unpardonable in oil painting. At all events, it is never to be detected in the smallest and most highly finished works of the Flemish and Dutch painters.* Either the

probably calculated on the effects of time for producing the requisite tone, it must often be a question whether the *patina* so acquired may represent the intended change or may have overpassed it.

* Van Gool remarks that Karel de Moor latterly adopted a stippled manner in finishing, his earlier works being quite

handling is free, as in Jeronimus Bos or his great successor Teniers; or the surface is produced, apparently at least, at one flow, without any indications of touch. The latter mode is that of Van Eyck, and afterwards of Mieris and others. But in none is the line or point (the *tratteggiare*, *punteggiare* of the tempera painters) visible: the system was even banished from the later works in tempera, and survived only in what Fuseli calls "the elaborate anguish of missal-painting." When it is remembered that Van Eyck himself sometimes wrought as an illuminator, and when it is remembered how minute the execution of some of the early painters was in their engravings and pen drawings, it is not a little surprising that they should have been enabled, in any degree, to forget their habitual methods when they had to deal with oil painting.

It remains to observe that the qualities in colour which, notwithstanding his occasional dryness, Van Eyck attained deserve to be classed among the essential excellences of the new method, and opened up its resourses. The leading attribute of the material of oil painting, as distinguished from those of

free from it. "In zynen laetsten tyt deet hy de laetste overschildering al stippelende . . . . maer voor myn keur zou ik de eerste manier de beste houden." — *De nieuwe Schouburg der Nederlantsche Kunstschilders*, &c., in 's Gravenhage, 1750, vol. ii. p. 432. Perhaps no instance occurs in the earlier Dutch or Flemish writers where such a manner is even mentioned.

tempera and fresco, viz. its power to transmit the light of an internal surface through superposed substances more or less diaphanous, was recognised and expressed. It is true, the early miniature-painting, when not restricted (as it sometimes was) to body colours, exhibited the effect of a light ground under the tints; but this impression was far more complete when the coloured medium, like glass or like a glassy varnish, had, as it were, a distinct existence, and was sensibly interposed between the light ground and the spectator. The important attribute of *depth* was thus proved to be greatly within the power of the new art; and it is the more probable that Van Eyck founded much of his style on the principle of glass-painting, because the characteristics of inward brightness and extreme force were sooner and more fully attained by him than the quality of roundness. His feeling for depth was, however, shown to be nearly allied to that of gradation, by his singular fondness for representing the effects of distance on form. His knowledge of perspective far surpassed that of Pietro della Francesca, Paolo Uccello, and his other Italian contemporaries. Vasari extols perspective designs executed for the first time, as he appears to think, at the close of the fifteenth century, which are not to be compared with some works of the kind by Van Eyck. Again, in Paolo Uccello (the chief early representative of the science in Italy) the love of perspective is to be traced to a

dependence on its mathematical rules, without the slightest feeling for it as a measure of space.* Van Eyck, on the contrary, while he shrunk from no labour which the mere science imposed, seems to have considered its most elaborate results only as a means of representing depth, and of contributing to the pleasing illusion of atmosphere and distance. With such aims it is not surprising that he should substitute, for the customary gilt field behind the principal figures, the cheerful openness of sky and background, and all the indications of inward, as opposed to superficial, extent.† He may have felt that the triumph was even more conspicuous in small dimensions. Facius, in describing the picture of the Bath (in Vasari's time in the possession of the Duke of Urbino), speaks of "horses and men of minute size [reduced by perspective], mountains, forests, villages, castles, wrought with such art that one would suppose them spread over a space of fifty miles."‡ Giorgione was thought to have added to

* "Fece i campi azzurri, le città di color rosso, e gli edificj variati secondo che gli parvè; ed in questo mancò," &c. — *Vasari, Vita di Paolo Uccello.* Compare Dr. Waagen, Ueber Hubert und Johann Van Eyck, Breslau, 1822, p. 131.

† See the just observations of Dr. Waagen (ib. p. 132.) on this subject. Among the rare instances of an open background in tempera pictures, before Van Eyck's time, may be mentioned a Madonna and Child by the elder Bizzamano. (See *Peintres Primitifs,* par M. Le Chevalier Artaud de Montor, Paris, 1843, pl. iii.)

‡ "Et item equi, hominesque perbrevi statura, montes, ne-

the resources of painting by exhibiting the back of a figure (whose front only was turned to the spectator) in a mirror. It is not impossible that he may have borrowed the idea from this same picture by Van Eyck. The writer above quoted, in another part of his description, says: "One of the females shows only her face and bosom, but a mirror which is on the other side, reflects her back, so that she is seen in that view as well as in front."* A mirror is introduced in the picture by Van Eyck in the National Gallery ; it is a remarkable example of the feeling of the painter for depth, since it (apparently) extends the limits of the space represented. In this work too, as in most of his interiors, he does not omit to give a glimpse of the bright sky through the open window. In the chiaroscuro picture of St. Barbara, before mentioned, the only portion coloured is the blue sky, as if the painter's first object had been to remind himself of the idea of space.

mora, pagi, castella tanto artificio elaborata, ut alia ab aliis quinquaginta millibus passuum distare credas." — *Facius De Viris Illustribus*, quoted by Morelli, *Notizia d'Opere di Disegno*, &c. p. 117.

* "E quîs unius os tantummodo pectusque demonstrans posteriores corporis partes per speculum pictum lateri oppositum ita expressit, ut et terga, quemadmodum pectus videas." — Ib.

NOTE

ON THE MODES OF STRENGTHENING PANELS BY LEDGES OR BATTENS.

PANELS on which fine pictures have been executed are often injured by the misapplication of parquetting. It would, therefore, appear that the method of safely strengthening wood by ledges, however familiar to cabinet-makers, is not so generally understood as could be wished, by those who undertake operations of far greater importance than the construction of the most costly furniture. A reference to some elementary facts connected with this subject may, therefore, not be without its use.

The fibres of a plank of wood, sawn in the usual way, run lengthwise. The expansion or contraction which can take place acts chiefly, if not solely, at right angles to the direction of those fibres. When this action is equal on both surfaces of the plank, the wood preserves its plane, although it may be altered in lateral extent. When the action is greater on one surface of the plank than on the other, whether from a difference of temperature or from any other unequal conditions, the wood is not only altered in lateral extent, but ceases to be flat, and is said to wind or warp. In this partial alteration, concavity indicates the shrinking of the surface; such shrinking being generally the consequence of the evaporation or destruction of the sap. If a thin piece of wood be exposed to heat till it begins to be charred, it will become concave on the side next the fire. The expansion or contraction of wood, under ordinary circumstances, is attributable to the presence or absence of moisture. A coat of paint, in as much as it protects the surface of wood from moisture and prevents evaporation, is to be considered as tending to produce warping, if confined to one side, or if its effect be not otherwise counteracted.

The warping of wood may be guarded against by forcible means; but the application of such means with a view to

prevent its splitting will generally accelerate the evil it is intended to obviate.

The wood being assumed to be well seasoned, the surest way to prevent its splitting is to leave it free to expand or contract according to the changes of temperature. If this free action be restrained in any point, the substance will sooner or later, in all probability, rend somewhere.

The first principle to observe, therefore, is, never to glue or in any way immovably fasten to the wood a ledge or batten in a direction contrary to that of the fibres. But, as ledges may require to be placed in that direction to prevent the warping of the panel, they should be attached in such a manner as, in answering that end, to allow of the lateral expansion or contraction. The general principle thus proposed may be carried out in various ways. The usual and effectual mode adopted in carpentry is to sink dovetailed ledges in corresponding grooves at the back of the panel. The ledges are not glued or even tightly fitted, but their keyed form prevents their falling out; and when used in a vertical direction, as in dadoes, they rest on the floor. They may or may not be flush with the surface of the wood, according to its thickness; in general they project above it.

Another mode which has been adopted with success for picture panels* (which are sometimes too thin to admit of sinking grooves in them with safety) is to glue battens, formed of a wood not firmer than that of the panel, in a direction parallel to that of the fibres. The ordinary glue, thus applied on a narrow extent only of surface, will always expand as much as the wood of the panel; so will the battens. Thus, no force is applied sufficient to restrain the free action proposed. Each of the battens is grooved at corresponding intervals on its under side, next the panel; and through these grooves flat cross pieces, touching the panel, are passed. These, which are at right angles to the battens, and consequently at right angles also to the direction of the fibres of the panel, are not only not

* Particularly by Mr. Francis Leedham, whose skill in lining pictures, and in transferring them from wood to cloth, is well known and appreciated.

glued, but are not even tightly fitted. They are secured at each end, so as not to slip out, by not passing through the two last battens, which are, consequently, fastened on afterwards.

In either of the above methods the edges of the panel should not be confined by a strong frame, but merely by slips sufficient to protect the edges of the picture from chipping. Whatever substance be employed for this purpose, and in whatever mode the slips are attached, they should offer no force which the expanding or contracting action of the panel cannot easily overcome.

As regards the glue employed to fasten the planks of a panel together, it is to be observed that, if not used in undue quantity, it merely represents one of the harder fibres of the wood (the intervals between which chiefly undergo alteration); its strength therefore does not, in this case, appear to be objectionable. But the glue used to fasten the ledges or battens, in the mode described, should on no account be so strong as not to obey the dilatation or contraction of the wood. When the panel is sufficiently thick, the planks of which it is composed may not only be glued but grooved (midway in their substance) across the joint, and feather-tongued.

With respect to the seasoning of wood, the action of the air is generally considered sufficient. Steam has, however, been applied with effect to destroy or consolidate the sap; and thus the propriety of Cennini's recommendation to boil the wood, whenever its dimensions admit of the operation, is indirectly recognised in modern practice. All such methods are, however, partial only in their effect. It is found, for example, that planks which may have served for flooring even for a century or more, if planed, become again liable to all the changes which new wood would undergo.*

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* "Wood in general, if exposed to drought, continues to shrink permanently more or less, especially in the lateral direction, or across its fibres, so long as it lasts; and, when alternately exposed to the expanding and contracting influences of moisture and drought, the permanent contraction is upon the whole accelerated and increased." — *Encycl. Britannica*, art. Hygrometry.

CHAP. XII.

PREPARATION OF COLOURS.

The practice of oil painting before the fifteenth century, however limited in its application, afforded ample means of testing the durability of colours mixed with the half-resinified vehicle. In this respect the inventors of the new method may be said to have inherited a long experience. The decorators, who had employed oil painting, had noted much that was calculated to be of service in a more refined exercise of the art; while, in all that related to the purification of the materials used for pigments, the tempera painters, and especially the illuminators, had set the example of the most scrupulous care.

With regard to the materials themselves, it does not appear that any colours of importance, used by the Flemish painters, are now unknown: on the other hand, some valuable pigments have been discovered by the moderns, of which those painters were ignorant. In investigating the practice of the early masters, it is therefore chiefly of consequence to inquire what process the substances finally underwent before they were used as pigments; and by

what contrivances colours which, under ordinary circumstances, were fugitive or changeable, were rendered durable.

Brilliancy, and purity from noxious ingredients, were proposed by the operations of grinding and washing. The perfect levigation of colours by such means was indispensable in the art of illuminating; indeed, far more so than in oil painting: but the Van Eycks, who themselves practised the former method, were not likely to abandon their habitual precautions in undertaking a new process. The finest trituration of certain substances was considered no less essential in tempera. Cennini, who enters fully into this subject, observes: "This colour [white lead] is the better the more it is ground."* Again: "Grind this black for half an hour or an hour, or as much as you please; but know that if you were to grind it for a year it would be blacker and better in tint."† Of sinopia (here meaning a red earth) he says: "The longer it is ground the finer [in tint] it becomes."‡ Of vermilion: "If you were to grind it for twenty years it would still be better."§ Ochre, in like manner, "still becomes more perfect" by grinding‖; and orpiment, "if you were to grind it for ten years, would still be improved."⁂ In general,

* Trattato, c. 59.
† Ib. c. 36.
‡ Ib. c. 38.
§ Ib. c. 40.
‖ Ib. c. 45.
⁂ Ib. c. 47.

it is found that colours are more vivid in proportion as they are finely comminuted; but this is by no means universally the case. Cennini himself remarks that some substances are to be ground but little; he mentions the green and blue carbonates of copper and Naples yellow (giallorino) as pigments which are injured in tint by much grinding.*

The habits of the missal-painters were inherited by the illuminators (limners) of the 16th and 17th centuries, a class of artists who were celebrated in England at those periods. As regards the careful preparation of pigments, the recorded methods of these later painters agree with those of their predecessors, and, in the history of technical processes, may be considered of equal authority. They divided colours into four classes, viz. those which required to be washed and ground, those which were to be washed only, those which were to be ground only, and those which required neither operation. The liquid vegetable extracts, for example, could be neither washed nor ground; ivory and blue blacks, and some other colours, were ground only; white lead was washed and ground; minium, massicot, bice, ultramarine, smalt, and some other substances, were washed only.†

* Trattato, c. 35. 46. 52.

† Norgate, The Art of Limning ether by y^e^ Life, Landscip, or Histories, MS. Compare Sanderson, Graphice, London, 1658, p. 55.; Brown, Ars Pictoria, London, 1675, p. 78. It

Norgate, referring to the last-named class, observes: "If you thincke to make them fine by much grinding, they instantly loose their beauty, becomeing starved and dead." He then minutely describes the process now called "washing over" or elutriation (a method commonly practised, not only in the manufacture of colours, but for other purposes), by which the substance was reduced to an impalpable state. The process is as follows. The colour, for example red lead, is first moistened to render it easily miscible; it is then placed in a basin, which is nearly filled with pure water. Being stirred and allowed to settle, the first scum, together with the fluid, is thrown away. After being well stirred in fresh water, the grosser parts only are allowed to settle, and the coloured water, in which the finer particles are still floating, is poured off into another basin. Water being added to the second basin, the colour is again stirred, and, as soon as the coarser parts have subsided, the rest is again poured off into a third basin. The operation is repeated six or seven times, the colour be-

appears that several copies of Norgate's treatise are extant. Dallaway, in his notes to Walpole (vol. ii. p. 43.), speaks of one in the Bodleian Library, dated 1654, which commences thus: "There are now more than twenty years past, since, at the request of that learned physician, Sir Theodore Mayerne, I wrote the ensuing discourse." Another transcript is in the possession of Sir Henry Bunbury, Bart.; and a third, from which the above extracts are taken, is the property of the author of the present work.

coming finer with each washing. According to the old process, the various sediments were then again washed with pure water, and any greasy scum floating on the surface was thrown away. "And if," observes Norgate, "you perceive a scum still to rise upon the water, pour it off again and again till the colour be clear. The scum is chalk and other filth in the colour [red lead], which you are to wash off as long as it doth arise." In the example of the process (on a very moderate scale) here quoted, large shells are used instead of basins. The writer continues: "The colour left in the first two shells is dross, but the colours in the other shells are for limning, and the colour in the fourth shell is finer and fairer than the colour in the third shell," and so on. The now pure water being abstracted, the shells with their sediments of colour are placed in the sun to dry. "This done, put your colour into several boxes or papers, reserveing the finest for your best use; your rest or courser sorts you may keep for your ordinary work."*

The small scale of the operation excepted, there

* In his 'Art of Painting in Oyl by y^e^ Life," forming an appendix to his *Art of Limning*, Norgate gives the following directions for washing. "Your readiest way for red lead is to put it into a fine cloth, and when it is tyed up (gathering the edges of the cloth together), shake and slubber it in a basin of fair water untill all the finest of it be washed out of the cloth. . . . . Try allsoe whether this way of washing will doe well for masticote, bise, verditure, and smalt, for I never proved it."

is no difference between the process here noticed and the modern "washing over" in the manufacture of very fine colours. There can be no doubt that the first oil painters, inheriting the methods of the illuminators, had the patience to prepare their choicer materials in this way. The older practice, though quite as minute, was in some respects less clumsy than that of the limners of the 17th century. Instead of shells, which were employed chiefly as receptacles for the colours in painting, the missal-painters used a cone-shaped glass (cornu pictoris)*; this was better adapted for collecting the sediment and pouring off the turbid and coloured water containing the finer particles. The ultimate operation described by Norgate, viz. washing, as distinguished from elutriation, is also commonly referred to in the ancient receipts.

In general, all foreign matter of the coarser kind subsides sooner than the pigment; the mere wash-

* "Ad purificandum azurium.—R. lazurū sive de alamania sive ultra marinū et fortiter duchatur sup lapidem sine mistione aque . . . postea ipsū accipias et ponatur ī chornu pictoris et ponatur sechū de aqua clara et bene duchatur cum bachullo," &c. —*Venetian MS., Sloane MSS.* 416.

"Vermiculum molendum est cum aqua et in cornu deinde mittendum et postquam in cornu positum fuerit implendum est cornu totum aqua," &c. — *Sloane MS.* 1754.

The "cornu pictoris," when perforated, as in the mode of washing oil before described, might serve as a filter, fine cloth being placed within it.

ing process had therefore only the effect of freeing the colour from lighter impurities, and particularly from soluble ingredients. The following example occurs in the Venetian MS. "To purify vermilion. — Take vermilion in the lump and grind it on the stone, first dry, and afterwards with pure water. Then put it in a shell and place it on warm ashes, that the moisture may be evaporated. When it is dry put it in a horn of glass, and throw in strong gum water; stir it with a stick, and then let it settle; throw away the first water, and repeat the operation two or three times. Thus your vermilion is purified."*

* "A purgare lo cinapō.—Toy locinapō ītiegro e maxinalo sopra la pietra a seco e poy cū aqua chiara e poy lamiti ī uno caparaço e mitilo sopra lacenē calda aço che la humidita vada via eqñ sra seco mitilo ī uno cornicelo de vedro e toy aqua de goma forte ebutagela dentº che stage amoglio emescolalo como uno steco e poy lasalo riposare ebuta via laprima e fa cussi due volte overo tre esrā purgato el tuo cenapō."

A modern writer on oil painting considers it "above all important to invite the attention of the artist to the necessity of subjecting the colours, especially the ordinary pigments which are chemically prepared, to a cleansing process before they are mixed with oil. After showing the importance of this in the instance of white lead, he adds the following example: —

"Grind rose madder lake in water and suffer it to dry on the stone. The colour will soon exhibit a number of needle-like crystals and a white saline efflorescence; both of which have an extremely bitter and pungent taste. When placed in the filter, the water from this colour quickly exhibits the evidence of the saline ingredient; so much so, that twenty or thirty washings are often necessary to free the colour from it. The

It has been seen that, in washing minium, a scum which floated quite on the surface was thrown away, either because it was supposed to be a foreign substance, or from its otherwise tending to injure the tint; but the minuter particles of the colour itself were reserved as the purest and best portion. The painters of the 14th century had observed that such particles are sometimes lighter in colour than the rest.* It would appear from a passage in the MSS. of Alcherius, that a common term was appropriated to this "extract" in all colours. "Bisetus, or the Biseth of folium, is less red in colour than folium itself, and is taken from that portion which floats on the surface. I believe that this term is applicable, in the same sense, to the lighter tint of any colour when tempered in shells for painting, [such lighter tint rising to the surface] after the colour has settled a little."†

efflorescence and crystals in question are alum, which thus exists in excess in the colour, and without a previous cleansing would be introduced into the substance of the picture." The same writer remarks that the effects of the filter on Prussian blue are no less convincing; and repeats that, in all these cases, the injurious consequences would not be confined to the impure colours themselves, but would affect other tints with which they might be brought in contact."—*Fernbach, Die Oelmalerei*, p. 58.

* Ultramarine is an exception; the minutest particles floating near the surface of the water are the purest and darkest in colour.

† "Bisetus vel Biseth folii est color minus rubens quam folium, et de eodem folio cum supernatat acceptus. Et credo per hoc

The first tint of certain substances was sometimes thrown away. De Mayerne gives an example*; but he refers to elutriation as follows. "All colours may be varied in quality in washing. The first particles which become diffused equally in the water form the finest [tint]; the last, the coarsest. Grind white lead first in water, then wash and suffer it to settle awhile; pour off the still turbid fluid, and let it rest. The sediment which it will form will be very pure, and more durable than the dregs [in the first vessel]."†

etiam potest intelligi qualiter clarescens color supernatans cuilibet ex coloribus cum in conchillis temperati sunt ad pingendum et aliquantulum quieverunt."

The colour "folium," described by Theophilus and all the early writers, appears to be the English woad, sometimes confounded with the "folium Indicum." Besides its ordinary blue tint, the substance, it seems, furnished a purple and a red colour.

* The following memorandum appears in the Mayerne MS. under the name of Norgate. "Pour faire bonne cendrée d'azur avec la bice des Indes.—Il le fault mettre en poudre très subtile sur un porphyre, non en métal, parcequ'il noircit et entre aultres le ♃ [tin]. La pierre, quoiqu'elle soit noire, estant lavée, elle devient bleu. Pilez, broyez, lavez avec vinaigre. La poudre au commencement est verte. Ce vert s'en va avec le vinaigre; le bleu reste au fonds."—*MS.* p. 22.

† "Toutes couleurs, en se lavant, se peuvent diversifier. Les premières qui se meslent exactement parmy l'eau sont les plus fines, les dernières plus grossières. Le blanc de plomb broyé premièrement avec l'eau puis lavé et laissé rasseoir en décantant l'eau trouble faict une résidue qui est très belle et meurt moings que le fonds."—Ib. p. 97. This washing may sometimes require to be repeated several times in the instance of white lead. (See Fernbach, *Die Oelmalerei*, p. 58.)

This finer portion, like the "Bisetus" of the medieval painters, is, in some instances, a change in the tint itself, as well as in its depth. Thus the lighter tint of vermilion, obtained in the mode described, inclines to orange, as compared with the colour from which it is separated.*

The perfect levigation of colours was of great importance to the oil painters on another account, besides the improvement of the tint. De Mayerne frequently remarks that the fading, offuscation, or, as it was called, the "death" of colours, is the consequence of their sinking in the oil. The alteration too often observable in colours which are themselves permanent may undoubtedly be so produced. The formation of a thick and more or less yellow skin of oil above delicate blues and greys, if not literally equivalent to their "death," may at least be said to entomb them. "The death of colours," observes De Mayerne, "is [that appearance which takes place] when the supernatant oil in drying forms a skin, which darkens by [long] exposure to the air. There are some colours, such as the smalts, which are not easily miscible with oil, but always subside without combining with it. They thus easily fade and become darkened."*

* Field's well-known "extract of vermilion." Fernbach probably means another substance, when he says that "the colour called purified vermilion blackens in a very short time if exposed to the sun."—*Die Oelmalerei*, p. 51.

† "La mort des couleurs est quand l'huyle, nageant au dessus,

Smalt, on account of its vitreous nature, cannot be very finely ground without losing much of its tint. The sinking of the colour would thus appear to be partly the consequence of the magnitude of its particles. Various contrivances, resorted to by the Flemish painters in Van Mander's time, to obviate the consequences of this, have been already noticed. They consisted in providing for the absorption of the oil, or in using a bleached oil of the purest kind.

The example which smalt affords of the sinking of the colouring substance (or, as it is sometimes called, the rising of the oil), and the modes of preventing it, throw some light on the practice of the early masters in regard to the preparation both of pigments and vehicles. To obviate the defect in question it might be proposed that the colour should be impalpable; that its vehicle should not only be as colourless as possible, but should possess as much firmness as is consistent with sharpness of execution. Accordingly, all these conditions were attended to in the first practice of oil painting. The expedient of thickening the vehicle with the view here indicated is alluded to by De Mayerne; a receipt for a clear but half-resinified oil (before given) is thus headed: "To make a thick

se seiche et faict une peau qui noircit à l'air. Il y a quelques couleurs, et les esmaulx entre aultres, qui ne se meslent pas aisément avec l'huyle, mais vont tousjours à fonds sans se lier, et ainsi meurent facilement et noircissent." — *MS.* p. 9. verso.

yet clear and very drying oil, fit to mix with colours which want body, in order to sustain them and prevent their sinking in oil."* The superior method of Rubens in meeting the particular difficulty which smalt presents will be noticed in the next chapter.

The other obvious method, which, for the reasons before given, was not possible or advisable in the instance of smalt and in a few other cases, was to reduce the colouring substance to the most impalpable state, so as to insure its admixture with (or suspension in) the vehicle. The minute particles of white lead, or of any other colour, which float long near the surface of water during the operation of washing, are not likely to sink in a much thicker fluid. The heaviness of the substance in a compact state was thus of little consequence, provided the particles were infinitely comminuted. The colour was effectually dried after washing, to prevent, as far as possible, the tendency to cake, especially since it was not always possible to attain

* "Pour faire une huile espaisse fort siccative, propre à mesler les couleurs qui manquent de corps, afin de leur en donner, pour ne tomber à fonds de l'huile."—*MS.* p. 16. Smalt, inasmuch as it will not bear much grinding, is said to have no body. In another sense, its particles being coarse, it might be said to have more substance than other colours. But in any view of this point smalt would be included in the colours referred to by the physician, because it is especially liable to sink in (unprepared) oil.

the requisite fineness by subsequent grinding consistently with perfection of hue.

If, therefore, the tempera painters reduced most of their pigments to an impalpable state, because, as Cennini remarks, the tint was thus greatly improved, and if the illuminators spared no pains for the attainment of the same object, the oil painters may be said to have had even additional reasons for following the established practice. Colours so prepared, when thinly spread over a white ground, not only exhibited that ground, and consequently their own hues in greater brilliancy, but were in less danger of sinking in the vehicle; while the oleo-resinous vehicle itself was of a nature to sustain the finely comminuted particles. Under these circumstances the colouring substance was as near the surface, and as little covered with the pure medium with which it was combined, as was consistent with its protection from the air; for these two causes of change, the effects of a humid atmosphere and the undue thickness of the pellicle of oil, both required to be guarded against, and the endeavour to fulfil these conditions appears to have gradually defined the method of the early Flemish oil painters.*

* To carry this principle to its utmost extent, it only remained to scatter the pigment in dust on the surface, before such surface was dry. This, as will be seen, was literally done in some cases.

Another contrivance to keep the colour above the oil, which was adopted by some later masters of the school, rather belonged to the Italian, and strictly to the Venetian, practice. It consisted in mixing an essential oil with all colours which were more especially injured in their effect by the supernatant vehicle. White, blues, and all delicate tints, including flesh tints, were thus treated. Scheffer, in his short, but not unimportant, observations on the different vehicles for colours, says that white should be tempered with spike oil (in addition to the ordinary medium).* Pacheco boasts that he used linseed oil with blues without fear. His method was to dip his brush occasionally in spike oil, thus causing the linseed oil to subside, and producing the effect which is called (improperly as applied to the pigment) "sinking in."† De Mayerne observes: "If, in using blue, a little spike oil be added to the cendre d'azur it does not fade."‡ Elsewhere, after speaking of the "death" of colours, in consequence of their subsiding in the oil, he again remarks: "Nota. The addition of spike oil to white or blue effectually prevents their fading;

* "Cerussam spicæ oleo temperare melius putatur."—*Graphice*, Norimb. 1669, p. 179.

† "I no tengo por malo mojar el pincel en el [azeite] de Espliego cuando se va pintando, porque ayuda a rebeverse."—*Arte de Pintura*, &c. p. 392.

‡ "Quand on travaille avec bleu, si on ajouste à la cendre d'azur un peu d'huyle d'aspic, la couleur ne meurt pas."—*MS.* p. 5.

I repeat this because it is a great secret." * The same recommendation appears under the name of Latombe. "With regard to blue, two or three drops of spike oil should be added to it; thus the colour sinks in, does not shine, and, having no oily skin on its surface, never fades, but remains bright." † According to another authority, "green does not fade, if, before applying it, a few drops of naphtha, or spike oil, or well rectified spirit of turpentine, be added to it on the palette; this causes the colour to sink in, and whatever sinks in does not fade." ‡ The following communication from Mytens is dated September 18. 1629. "The way to make all kinds of colours sink in and look dull, and to prevent their shining, is to temper them on the palette with linseed or nut oil, to a pound of which a quarter of an ounce of spike oil has been added." § The editor of De Piles, who was well

* "N. L'addition de l'huyle d'aspic au blanc et au bleu, qui fait qu'ils ne mourront jamais, ce que je repète parceque c'est un grand secret." — *MS.* p. 10.

† "Pour le bleu fault adjouster un peu d'huile d'aspic, deux ou trois gouttes, ainsi la couleur pénètre, ne reluit point, et, n'ayant point de peau huileuse à la superficie, ne meurt jamais, mais demeure belle." —Ib. p. 11.

‡ "Un peintre François. Le vert ne meurt pas, si, quand on le met en œuvre, on adjouste sur la palette quelques gouttes de pétrole ou d'huyle d'aspic ou de therebenthine fort clair. Cela faict emboire la couleur, et ce qui s'emboit ne meurt point." — Ib. p. 9.

§ "M. Mitens, peintre très excellent. 18 Septembre, 1629.... Le moyen de faire emboire toutes sortes de couleurs, les rendre

acquainted with the methods of his time, records a similar process*: Félibien† and Dupuy du Grez‡ also recommend it, and the authors of the *Encyclopédie Méthodique*§ repeat the same advice. De Mayerne does not omit to remark that, when the surface of an unfinished picture shines, the oil of a superadded layer of colour readily combines with that of the inner, leaving the external face without gloss: but (he might have added), if the inner surface be quite dry, this effect will not take place. By whatever means the inner surface attracts or absorbs the oil the outer will look dull: on the other hand, mere polish (as in the instance of glass) does not of itself produce the appearance which is called "sinking in."‖

mattes, et empescher qu'elles ne reluisent, est de les destremper sur la palette avec de l'huile de lin ou de noix, à une livre de laquelle on ait adjousté seulement un quart d'once d'huile d'aspic."—Ib. p. 95.

* E'lémens de Peinture Pratique, Paris, 1776, p. 139. The original edition of this work (1684) is extremely scarce, and in the "édition entièrement refondue et augmentée" of Jombert, which has superseded it, it is difficult to say what portion belongs to De Piles. The French writers on art of the 17th century, and their followers, evidently borrowed their technical details from Flemish authorities; their testimony is valuable accordingly.

† Des Principes de l'Architecture, de la Sculpture, de la Peinture, &c., Paris, 1697, p. 298.

‡ Traité sur la Peinture, Paris, 1700, p. 245. 252.

§ Encyc. Méthod. Beaux Arts, tome ii. p. 652. 657.

‖ See Franchi, La Teorica della Pittura, &c., Lucca, 1739, p. 169.

The use of an essential oil with the colours was not, in all cases, intended to produce a dull surface; that effect depends on the quantity employed, and also on the nature of the original vehicle. A certain proportion, serving only to dilute a thick oleo-resinous medium, was compatible with the glossy surface, which was an especial object with the early Flemish masters, and which superseded a final varnish. It has been seen that works so executed were frequently completed at once. But when, in a later practice, the picture was laid in, or, in the modern sense of the term, dead-coloured, it was desirable that the surface, which was to be again painted upon, should not shine. The Venetians, who covered their pictures repeatedly, took every precaution to prevent the colours from shining; and, as this system was pursued more or less to the end of the work, they generally found it necessary to add a varnish at last.

The varnish so applied was by no means thick: pictures retain their brilliancy in a dry climate with the least possible protection of their surface. A Spanish writer, after prohibiting the use of verdigris, red lead, the green carbonate of copper, and orpiment, adds, that in (the dry air of) Andalusia these colours will last.* It is well known that the causes of change in pigments are, in many instances, doubly active, or only active when assisted by humidity. Thus, if a strip of paper coloured

* Palomino, El Museo Pictorico, tomo i. p. 56.

with red lead be introduced into a volume of sulphuretted hydrogen, it remains unchanged for a considerable time while dry; but, if it be moistened, the discoloration is almost instantaneous. White lead, treated in the same manner, blackens quite as rapidly.* A protection of some sort was thus indispensable for the preservation of pictures in the damp climate of the Netherlands; the colours required, to use the painter's phrase, to be "locked up:" but this was accomplished not so much by an adventitious coating, which if removed would leave the surface almost exposed, as by intimately combining the substance of the pigment, and, as it were, clothing its atoms with the firm, drying, and colourless vehicle which has been before described.

With respect to other causes of change, the pro-

* "Although in England the whites of lead cannot be employed, except with oil or varnish, they are, as is commonly known, used in Italy as distemper pigments, and, under the influence of a dry and pure atmosphere, remain for a very long time unchanged, locked up by size only. When brought to this country, the distemper paintings executed with lead-whites are very quickly discoloured. If it were possible to keep them perfectly free from moisture, impure air would not so readily attack them: moisture greatly facilitates the combination of the lead-whites with sulphuretted hydrogen, the chief agent in the changes that take place. The prevalence and general diffusion of this agent in our large cities, assisted by the penetrating influence of our humid climate, which cannot by any known means be with certainty guarded against, subject lead-whites to the changes which render them unavailable as water-colour pigments."— *Communication from Mr. Winsor (of the firm of Winsor and Newton).*

tection from light would seem to be more needed in the South; yet the custom of enclosing pictures in shrines was retained much longer on this side the Alps than in Italy: there, a silken curtain sufficed to protect the work from the solar rays, or from the action of strong light.* The Northern practice may, therefore, still be traced to the necessity of protecting pictures, not indeed from damp itself (which cannot be effectually excluded by the means adverted to), but from dust and smoke, and the impurities which more readily adhere to a moist surface.

The permanence of colours was, for the above reasons, an object of especial attention in the schools of the Netherlands; and perhaps the very experience which was the result may have led to an undue confidence: instances, at least, are not wanting, in which pigments of known instability were used by the best artists in those schools during the 17th century.

The principal colouring substances employed at various times in Flanders and Holland will now be enumerated, together with some of the recorded expedients for insuring the durability of the tints.

* The use of curtains before pictures, to protect them from strong light, is discussed and recommended by Mancini in his *Trattato sopra le Pitture antiche.* This work (referred to by Lanzi in treating of the Sienese school) exists in manuscript only; it contains no information of importance.

On the use of triptychs in Italy and in Flanders, see a note at the end of this chapter.

White. — Among the resources of the Flemish painters for correcting the lowering tendency of the "vehicle," may be mentioned their habit of painting quite up to the brightness and force of nature. The observance of this principle is scarcely less apparent in the masters of the 15th century than in Rubens. The saying of an early Italian writer, "that it would be well for art if white paint were as dear as gems*," was often repeated in Flanders; yet it was an especial object to obtain white of the purest quality. The frequent observations of De Mayerne, on supposed discoveries of brilliant whites by the painters of his time, show how much attention was then given to this subject. All such novelties gave place, however, to the customary white lead†: this was refined and purified by washing, in the mode before described. When ground in oil it was kept in water, and was considered to be still further improved in tint by being

* Leon Battista Alberti, Della Pittura e della Statua, lib. ii.

† The "schelp-wit" mentioned by Hoogstraten (*Inleyding*, &c. p. 220.) and the "schulp-weiss" of Sandrart (*Teutsche Acad.* 1er theil, p. 87.), literally "shell-white," mean only a lead-white prepared, according to the last-named author, in England during the seventeenth century. But Beurs, if his German translator is correct, speaks of the white prepared from (oyster) shells as preferable, for delicate works, to white lead. (*Die grosse Welt*, &c. p. 8.) The pearl-white, which is of this kind, is extremely brilliant, but has not body enough for oil.

exposed in this state to the sun.* The white of calcined hartshorn, according to a writer of the 14th century before quoted, is the only substance which can be safely mixed with orpiment to lighten it.

Yellow. — Van Mander, referring to the tradition respecting the use, by some painters of antiquity, of four colours only, remarks that the Flemish artists had a fuller scale in yellows alone; for, he observes, "besides ochre, we have massicot, yellow lake, and two orpiments."† "The yellows which we use," says Hoogstraten, "are light and brown Roman ochre, massicot, and yellow lake. Orpiment may also be sometimes employed in brilliant draperies."‡ De Bie enumerates massi-

* "Blanc de plomb soit premièrement broyé avec l'eau, puis estant sec, avec l'huyle. Vous le mettez deux ou trois fois au soleil, couvert d'eau; il devient beaucoup plus blanc."—*Mayerne MS.* p. 6. "Toutes couleurs se peuvent garder broyées avec eau et seichées, et se destremper seulement avec l'huile, quand on en veult user, sur la palette, hormis le blanc de plomb, qui, estant dans l'eau, devient toujours plus beau."—Ib. p. 86.

† "Maer wy hebben nu wel al vier verscheyden
Ghelen boven ten Oker in ons tenten,
Masticot, schiet-gheel, en twee Oprementen."
Het Schilder-Boeck, p. 53. verso.

‡ "'t Gheel, dat wy gebruiken, is lichten en bruinen Roomschen oker, mastekotten en schietgeelen. Men kan het opriment in schoone kleederen ook somtijts te pas brengen."—*Inleyding tot de Hooge Schoole der Schilderkonst*, &c., Rotterdam, 1678, p. 220.

cot, ochre, and yellow lake*; Beurs mentions king's yellow (yellow orpiment), light and brown ochre, massicot, red orpiment, and light and dark yellow lake.† He remarks that massicot blackens in time‡; and Van Mander, speaking of the same colour, recommends that it should not be used in flesh, as it turns to a heavy tint, and, moreover, dries so rapidly as to be inconvenient to use; very fine light ochre, he observes, is to be preferred.§ It is remarkable that in none of these writers, or their contemporaries of the same school, is any substance mentioned which can be considered as intended to represent Naples yellow, a colour then common in Italy, and which is supposed to have been used by Rubens. On the other hand, no colour is more frequently named than yellow lake.

As the ochres were chiefly relied on for flesh, it must have been an object to obtain them of the lightest and purest tint; the browner kinds were more easily procured. Among the deeper yellows,

* Het Gulden Cabinet, tot Lier, 1661, p. 209.

† Die grosse Welt ins klein abgemahlet, zu Amsterdam, 1693, p. 6.

‡ Ib. p. 14.

§ "Ick meen den Masticot meuchdy wel swichten,
En ghebruycken hier toe seer schoonen lichten
Oker, als voorseyt is, t' is meer gheraden,
Dan zijn Carnaty te gaen overladen
Met dees swaer verwe, verstervich in 't hooghen,
En quaet te verwercken door 't haestich drooghen."

Het Schilder-Boeck, p. 50.

the colours produced by the rust of iron (Mars yellow) are sometimes mentioned. One of De Mayerne's authorities appears to consider "ochre de rut" and "ochre de rouille" as synonymous.* An English writer of the seventeenth century includes "the best rust" in a list of colours.†

Massicot, though generally condemned, and failing most when mixed with white, is often incidentally mentioned by the above writers as the light yellow which was chiefly in use.

The colours coming under the head of yellow lake are numerous. Transparent tints of this kind, prepared from different vegetable substances, are described in the earliest records of painting. The extracts were originally applied as lackers, but, at a later period, most of the pigments of this description were reduced to a substantial form by impregnating white earths with the juice. Mytens, quoted by De Mayerne, classed the ordinary yellow lake among the earths, on account of the chalk which served to give it body.‡ The ancient lackers were applied with the thickened oil, or with oleo-resinous mixtures; and, thus protected,

* MS. p. 123. Compare the Encyclopédie Méthodique, art. Ochre.

† Brown, Ars Pictoria, appendix, p. 5.

‡ "*Mytens.* Pour le jaulne l'ocre jaulne l'ocre brune qui donne un roux fort beau le schitgeel ou pinke peult aussi passer entre les terres parceque son corps est de craye quoique la teinture vient de l'herbe Isatis [read Reseda Luteola] laquelle est précipitée avec l'alum puis paytrie avec la craye." —*MS.* p. 123.

may have appeared to later observers as very durable colours. The blue plants, and blue ivy leaves, sometimes conspicuous in Dutch pictures, and now deprived of their complemental yellow, show that the transparent tints of the latter were not always employed with due caution.

The yellow lakes which were familiar in the seventeenth century differed but little from those now employed. The "graines d'Avignon" (Rhamnus infectorius), weld (Reseda Luteola), broom (Genista tinctoria) *, and numerous other vegetable substances, including curcuma, saffron, aloes, and the inner rinds of various trees, are all occasionally mentioned; but none can be considered equal to the quercitron bark, from which the best specimens of this colour are at present prepared.† There was however one substance, viz. gamboge, now undeservedly fallen into disuse in oil painting, which is superior to most, if not to all, of those above named. The colouring matter united with its resinous portion, which renders it more durable in oil painting, may be easily freed from mere gum.‡ De Mayerne, it would seem on good

* The yellow lake called scudegrün, according to a receipt quoted by De Mayerne, was prepared from the "fleurs de genestes." (*MS.* p. 172.)

† For an account of this colour by its inventor, see Bancroft, *Experimental Researches concerning the Philosophy of permanent Colours*, London, 1813, vol. ii. p. 112.

‡ One method is to dissolve the gamboge in alcohol, and then precipitate the colour, united with the resinous portion,

grounds, pronounces in its favour; and his speculations respecting the best mode of using it are confirmed by modern authorities. "Gamboge," he observes, "furnishes a beautiful yellow, constant, unfading, and that works freely." * Again: "There are two kinds of gamboge; one, which is pure and very clean, now (1640) sells for eight shillings the lb.; the other, dirtier, redder, and which, when ground, approaches an orange tint, only costs half that price. . . . The coarser kind answers best, and gives the splendour of gold perfectly, used alone." † He then describes his having mixed it with his amber varnish diluted with spirit of turpentine. He proceeds: "Portman thinks that the gilt leathers of Amsterdam, which are so beautiful, are varnished with this gum.‡ He is of opinion that by boiling

by means of water. Another, and perhaps a better, mode is to dissolve the substance in ether; the gum and impurities subside, leaving a yellow fluid. This is easily separated from the dregs; and, when the ether is evaporated, the colouring matter, combined with a small quantity of resin, remains pure.

* "Un beau jaune, constant et qui ne meurt point et qui s'estend excellemment, est le Gutta Gummi. Je croy qu'avec le bleu on en peult faire un verd excellent." — *MS.* p. 23.

† "Il y a deux sortes de Gutta Gummi ou Gambouja, l'une est pure et fort nette, dont la livre se vend 1640 pour huit shill., l'aultre plus sale, plus rousse, et qui broyée approche de l'aurangé, ne coustant que la moitié du prix de la susditte. . . . La plus grossiere faict beaucoup mieux et donne l'esclat de l'or parfaitement, toute seule." — Ib. p. 74. verso.

‡ The physician, who omits no particulars, remarks that the colour was spread by the leather-varnishers "en battant avec

it in oil it would dissolve better, and might be spread more easily. For myself, I do not think this necessary: I would grind it in very clear spirit of turpentine, and keep this preparation, of the consistence of honey, in a glass. To make use of it, I would temper it with my [amber] varnish, or any other of the kind which would render the colour sufficiently liquid, so as to be able to spread it with the brush." * He suggests that a very little clear drying oil might be added.

le doigt," by tapping with the finger. Glazing-colours, which have no body, can only be applied by some such operation. Armenini directs that a pad or ball should be used, formed of cotton wrapped in a piece of linen; "un piumazzolo di bambase coperto di tela lina." (*I veri Precetti*, p. 127.)

* "Portman croit que les cuirs dorés d'Amsterdam qui sont si beaux se dorent avec cette gomme. Il croit qu'en la cuisant dans l'huile elle se dissoudra mieux, et se couchera plus également. Moy je croy qu'il n'en est pas besoing. Je voudrois broyer la dicte gomme avec huyle de therebentine fort blanche . . . et guarder ceste mixture dans un vaisseau de verre, estant reduite a consistence de miel. Pour m'en servir je voudrois la destremper avec mon vernix magistral ou un aultre equivalent, et luy donner la consistence assez liquide pour pouvoir le coucher avec le pinceaul." — *MS.* p. 75.

A description (in the Strassburg MS.) of a yellow varnish, prepared with amber and drying oil, was noticed in a former chapter. Among the yellow dyes which are mentioned, either of which might be employed to tinge it, the expression "pic. goct." (picis Gokathu) appears to mean gamboge. "The natives of the coast of Coromandel call the tree from which it is principally obtained Gokathu, which grows also in Ceylon and Siam." — *Field, Chromatography*, London, 1841, p. 155.

If the above reading be correct, there can be little doubt that

Gamboge, freed from its gum and dissolved in spirit of turpentine, easily combines with unctuous vehicles, but, in order to last, it requires to be effectually "locked up." Mr. George Barker, well known for his skill as a picture-restorer, is in possession of a canvass covered by Sir Joshua Reynolds with patches of colours mixed with different vehicles. The names of the substances used, and the dates of the principal experiments, are written next them. The following are examples of tints which have stood perfectly well. "Yellow lake, cera, and drying oil. Gamboge and lake with Venice turpentine. Gamboge with turpentine, March 6. 1772. Prepared gamboge with cera. Verditer, varnish alone. Gamboge with Venice turpentine, June 3. 1772." Contrasting with these unfaded colours, "gamboge with oil" is to be traced only by its name. All the above experiments appear to have been made in 1772.

De Mayerne may have known that the amber varnish which he recommends was used in Holland with transparent yellows: some examples are here added, as they confirm the evidence before adduced respecting the employment of this varnish as a medium for colours. "Take half an oz. of aloes, half an oz. of amber, pulverise both, and set

gamboge was used by the early Flemish painters. Scheffer (*Graphice*, p. 168.) asserts, perhaps erroneously, that it had been recently introduced into Europe in the 17th century.

them on hot coals in a glazed earthen vessel. The heat at first should not be too great. As soon as the amber is dissolved, throw in boiling oil, stirring well with a wooden spatula. Let it cool; strain through a cloth." * Again: "Take linseed oil, in the quantity required, which has been previously boiled and skimmed; add to it amber and aloes, of each equal quantities; pulverise well, and stir them in the oil on the fire till the composition is thick enough," &c. †

It was before shown that a transparent yellow was sometimes mixed with certain colours to enrich them. The painters whom De Mayerne consulted even recommended the immixture of a yellow of this kind with vermilion, as a substitute for minium.‡ A transparent golden or orange colour

* "Neempt een loot aloe, een loot amber, stootet beyde wel onder een. Settet op heete colen in eenen verloyden pot, int eerste niet al te heet, alst nu wel tsamen gesmolten is, so giet siedende olie daer op, roeret wel door een, met een houten spatula, latet coudt worden eñ sijget door een doeck." — *Secreet-Boeck waer en vele diversche Secreten . . . ghebracht zijn*, tot Dordrecht, 1601, p. 180.

† "Neemt so veel Lijnolie alst u belieft, die te voren opt vyer afgeschuymt geweest is, doet daer in amber eñ Aloe, van elckx even veel, stootet wel onder een, ende menghelet wel opt vyer onder de Olie tot dattet dichte genoech is, nemet alsdans van den vyere eñ settet dichte toegestopft under der aerden dry daghen lanck, ende al wat ghy hier mede op Tin strijct dat crijcht een Gout verwe." — Ib. p. 182.

‡ "La mine meurt, et n'est pas bonne a l'huile. Pour faire aurangé fault mesler vermillion et schitgeel ensemble." — *MS.* p. 5.

appears to have served a more important purpose in the hands of Rubens. The peculiar glow of his deep browns is hardly to be accounted for by any accidental varieties in the earths of Cassel, which may have been common in his time; nor does even asphaltum, alone, present the appearance in question. It may rather be concluded that the practice of occasionally mixing a warm transparent yellow with various pigments was applied by the great colourist to correct the redness of some of the darker browns; by this means the utmost richness of tint was produced in shadows, through which a light ground was often visible.

Among the permanent transparent yellows, that prepared from madder is not to be forgotten. This colour is generally considered of difficult manufacture; in modern times, and perhaps formerly, it has been chiefly prepared in the Netherlands: its tendency to become slightly orange is no objection to it for the use above adverted to.*

The gold field behind the principal figures, as noticed in the last chapter, was discarded by John Van Eyck. A gold ground was, however, occasionally used at a later period under the colours: a picture of the Last Judgment, by Bernard Van Orley, which is still preserved at Antwerp †, was

* Mr. Field (the author of *Chromatography*) often prepared this colour for Sir Thomas Lawrence.

† In its original place, the Aalmoeseniers-Kapel.

executed, according to Van Mander *, entirely on a gold ground. The customary white panel would perhaps have answered better; but, in some cases (examples occur in early German pictures), a gilt background toned with brown till it ceases to shine is to be classed among the richest effects of yellow.

Orpiment was commonly used in draperies. (Cornelius) Jansen's mode of employing it, inserted under his name in the Mayerne MS., is probably in his own handwriting. As Vandyck's method will be quoted in the next chapter, the remarks of his predecessor need not be given at length ; after describing the two kinds of orpiment, Jansen continues: "It must be ground in water, and, when it is dry, it will easily temper with oyl, either on a pallett or stone, as one uses quantity, but it will never grind fayre in oyl. . . . Orpiment will ly fayre on any culler except verdigris, but no culler can ly fayre on him; he kills them all †: either being wrought upon by other cullers, or mingled with other cullers, except yellow oker or such like

* Het Schilder-Boeck, p. 211.

† The Flemish writers are careful to distinguish the colours which cannot be safely used *under* other colours. One of De Mayerne's correspondents writes: "Il fault toutesfois notter et estre adverty que la dicte myne, le vert de gris, le noir de fumée ou de lampe, sont comme des poisons et que font mauvaises ces couleurs qu'on y met dessus, et pour ce fault les eviter en imprimant," &c. — *MS.* p. 100. verso. Umber is also included, by some authorities, among the colours which should not be used too freely in grounds.

culler to break it for shadows; but shadows are best made of other cullers, and then orpiment use for hightnings." * De Mayerne does not omit to add that orpiment should not be touched with an iron knife.

Red.—Vermilion, minium, lake, and "face brown red," are mentioned in the Strassburg MS. The use of vermilion by Rubens, in flesh, has been sometimes supposed to be one of the great painter's bold peculiarities, but there never was a time when it was not so employed by the Flemish painters. The carnation tints of the single figures, by Hubert Van Eyck, in the upper part of the Ghent altar-piece, are evidently painted with vermilion. Van Mander, whose precepts, as before remarked, are antecedent to the influence of Rubens, thus recommends its use. "Let not your flesh colour freeze; let it not be too cold or purple, for a carnation which approaches the whiteness of linen cannot bloom with the signs of life. But vermilion makes it glow with a more fleshy hue. Endeavour to produce this warmth. . . . In painting peasants, shepherds, and mariners, spare not yellow ochre with your vermilion. . . . Be careful not to light up the flesh tints in either sex with too much white; no pure white is visible in the living subject." †

* MS. p. 153.

† "Nu aengaende t'verwen, laet niet vervriesen
U blos, noch soo cout oft purperich laten:
Want sulck een lacke wittigh' incarnaten,

In his account of Jacques de Backer, and the early works of Joos van Cleef, he commends those painters for having avoided the defects here alluded to.*

> Carnaty en can niet lijfverwigh bloeyen,
> Maer vermillioen doet al vleeschigher gloeyen.
>
> Om wel doen gloeyen hebt u speculaty. . .
>
> Aen Boeren, Herders, en aen die daer varen
> Door wilde golven, mit stormen bestreden,
> Daer salmen den ghelen oker niet sparen
> Onder t' vermillioen. . . . .
>
> Hooght so niet met wit Mans naecten noch Vrouwen,
> Geen puer wit in 't leven blijckt in 't aenschouwen."
>
> *Het Schilder-Boeck*, p. 49.

* Het Schilder-Boeck, p. 232, 227. Of De Backer the biographer remarks: "He was one of the best colourists Antwerp has produced; he had a fleshy manner of painting, not lighting up his carnation with mere white, but with the flesh tint."

On the durability of vermilion, when not adulterated with red lead, and on the means of detecting the latter, see the *Encyc. Méthodique*, art. Cinnabre. The most valuable observations on colours, in the work here quoted, are extracted from the anonymous *Traité de la Peinture au Pastel*, Paris, 1788.

The following anecdote is related by Northcote in his *Life of Reynolds:* "I once humbly endeavoured to persuade Sir Joshua to abandon those fleeting colours, lake and carmine, which it was his practice to use in painting the flesh, and to adopt vermilion in their stead, as infinitely more durable; although not, perhaps, so exactly true to nature as the former. I remember he looked on his hand and said, 'I can see no vermilion in flesh.' I replied, 'But did not Sir Godfrey Kneller always use vermilion in his flesh colour?' when Sir Joshua answered rather sharply, 'What signifies what a man used who could not colour? But you may use it if you will.' It is to be observed, however, that Sir Joshua made use of vermilion himself in all

The use of vermilion was still more confirmed after it had received the sanction of Rubens. Beurs, who, in his chapter "on the colours of the living model," undertakes to describe a palette for painting flesh, employs vermilion and lake as the only reds for the light masses.* In the earlier part of the 17th century, great attention seems to have been paid to the manufacture of this colour, so as to obtain it in the most brilliant state. "A man at Antwerp," observes De Mayerne, "makes vermilion three times as red as the average colour;" the price at which it was sold was, for the time, enormous.†

"We use," says Hoogstraten, "Indian red, and brown red, vermilion, and minium." ‡ Elsewhere: "With us, lakes are in use, not only the purple, but the blue, green, and brown, or tints of yellow lake." §

his latter works; finding by experience the ill effects of lake and carmine in his early productions." — Vol. ii. p. 18. The lakes, it may be added, were very inferior to those now in use.

* Die grosse Welt, &c. p. 183.

† MS. p. 95. After speaking of the brilliancy of the colour, the physician speculates on its cause: "An iterata sublimatione, an per additionem sulphuris," &c. Another brilliant red is mentioned by him as follows: "Sircome, Sericon, couleur rouge comme cynabre qui dure au feu et ne meurt point: semble un mercure precipité de fort haulte couleur; mis sur la lamine ne s'esvapore point; s'allie facilement avec toutes sortes de couleurs." —Ib. p. 96.

‡ "Wy gebruiken Indiaens en bruin-root, vermelioen en meny." — *Inleyding*, &c. p. 220.

§ "By ons zijn de lakken in gebruik, niet alleen de paersse,

The "blue lakes" may be passed over; the green will be briefly noticed in speaking of that colour. These vegetable preparations were no doubt introduced by the illuminators; and, as they are for the most part evanescent colours, their use, at the best period of the Dutch and Flemish schools, can only be accounted for by the confidence with which painters then reckoned on the method of "locking up" tints with protecting vehicles. The experiments of Reynolds, before quoted, exemplify the effects of this expedient.

As regards red lake, the painters of the Netherlands obtained it in perfection. The cultivation of Zealand madder was greatly encouraged by the Emperor Charles V., and for a long period Holland monopolised the sale of the material.* The lac lake of India was no less familiar†; but whether the modern methods of extracting the purest colouring matter from this substance were known and practised is by no means so certain.‡

maer ook de Blaeuwe, Groene, en Bruine of schietgeelverwige." —*Inleyding*, &c. p. 222.

* Bancroft, Experimental Researches, &c. vol. ii. p. 221. De Mayerne observes: "La lacque pour glacer doit estre meslée avec peu d'huyle et estre broyée aussi espaisse que du beurre, de sorte qu'elle se puisse couper, aultrement elle n'a point de corps et ne vault rien." — *MS.* p. 87.

† "La lacque qui vient des Indes orientales est une excellente couleur. . . Icelle bruslée en creuset couvert jusques à noirceur seulement faict un noir aussi beau qui celui d'yvoire et qui a plus de corps."— Ib. p. 29.

‡ In a Dutch publication before noticed it is called "a light

The "brown reds" included many kinds of red earths, and the varieties produced by burning the ochres.* "Indian red" may have comprehended, as now, the colcothars of vitriol, formerly called "caput mortuum."

Minium is found to have been generally used alone by the early masters: this accounts for its lasting as a colour, and may also explain the occasional flatness of its tint in draperies. When mixed with white lead and some other colours, it is liable to change. The miniature-painters, who contrived to use it in flesh with white lead, preferred it to vermilion. The oil painters, on the contrary, while they rarely complained of the latter, not unfrequently recorded their objections to minium. Van Mander includes it with verdigris and orpiment, recommending that all those colours should be generally avoided.† De Mayerne observes that "minium fades, and is not good in oil." He then adds: "If you extract the salt from minium with

brown colour." "Gummi Lacca is een wonderbarelick gomme alsmen die, cleyn gestoot en in clare water heet maeckt, so maecktmen daer van een lichte bruyne verwe."— *Secreet-Boeck*, tot Dordrecht, 1601, p. 227.

* The Dutch painters rendered the colour of light red (burnt yellow ochre) brighter by quenching it in wine or in vinegar. "Alsmen hem brant dat hy gloyende wort, eñ met wijn of met azijn blusschet so wort hy vael root, hy is goet om daer mede opt bloote lijf te strijckē."— Ib. p. 246.

† "Meny en Spaens groen wilt oock vry versaken,
En Orpimenten, giftich van natueren."
Het Schilder-Boeck, p. 50.

distilled vinegar, the remainder does not fade, and dries very well." *

Blue. — "For our blues," says Hoogstraten, "we have English, German, and Haarlem ashes, smalts, blue lakes, indigo, and the invaluable ultramarine." † The "ashes," so often mentioned by writers of the seventeenth century, never mean ultramarine ashes, but light blues derived either from silver (the "Indian bice"), from carbonates of copper, or from smalt.‡ The later Dutch painters found that some of these colours little deserved their reputation. Weyerman remarks that the monotonous grey observable in Van Goyen's works, "was not altogether his fault; but in his time a colour was in fashion called Haarlem blue," which, being very perishable was the cause

* "N.B. Si vous otez le sel de la mine avec vinaigre distillé, ce qui reste ne meurt point et seiche fort bien." — *MS.* p. 5. St. Audemar, one of the medieval writers quoted in a former chapter, directs minium to be washed in the "cornu" with wine and water.

† "Wy hebben tot ons blaeuw, Engelsche, Duitsche, en Haerlemse Assen, Smalten, blaeuwe Lakken, Indigo, en den onwaerdeerlijken ultramarijn." — *Inleyding*, &c. p. 221.

‡ The method of preparing blue from silver is often described in early receipts. Boyle and others observe that the tint is derived from the copper which is commonly intermixed with the finer metal. The best quality of the colour called bice, according to De Mayerne, was obtained from some silver mines in India. (*MS.* p. 16.) The German azure ("azurro de la Magna"), much used by the early painters, was not cobalt, but a native carbonate of copper.

of this defect.* Indigo is generally condemned by the professional authorities whom De Mayerne quotes, but, according to one of these (Elias Feltz of Constance), the colour may be rendered safe by steeping it in vinegar, and exposing it to the sun for two or three days; the vinegar is then to be poured off, and the paste when dry may be ground in oil.† Under the name of Feltz, the following note also appears. "An excellent mode for rendering indigo, yellow lake, and lake permanent in oil. Calcine 'roche' alum in a clean crucible, so as to render it very white in colour and light. Grind some of this powder with the above-mentioned colours in nut oil, on the stone or on the palette. The colours are thus much more vivid, and, having been exposed to the sun, rain, and wind, they have not faded. They generally fade, and even in a few hours, in the sun."‡ In the margin is written: "June 19. [1642], Feltz expertus est et valde probat."

* De Levens-Beschryvingen der Nederlandsche Konst-Schilders, &c., in 's Gravenhage, 1729, 1e deel, p. 395.

† MS. p. 145.

‡ "Excellent moyen pour fixer l'Indigo, le Scüdegrun et la Lacque à huyle. Calcinez de l'alum de roche dans un creuset bien net, de sorte qu'il soit très blanc et leger. Broyez de cette poudre avec les couleurs susdittes avec huyle de noix, soit sur la pierre, soit sur la palette à poignée. Les couleurs sont beaucoup plus orientales et ayant esté exposées au soleil, à la pluye, et au vent, ne sont point mortes, ce qu'elles sont ordinairement et dans peu d'heures au soleil." —*MS.* p. 145. verso.

It seems to have been an especial object with the Flemish painters, to protect blues from the alteration commonly occasioned by the yellowing of the oil. Extraordinary methods were adopted for this purpose. Sometimes the blue was painted in size; and, in order to make it adhere effectually to a dry oil ground, the surface was first rubbed with the juice of garlic; the colour afterwards received a coat of "thin and very drying varnish; thus," adds De Mayerne, "your blue will never fade."* He also notes the following method. "After having painted a drapery with a smalt and white lead . . . while the colour is still fresh, powder ultramarine over it, and then, with a very soft feather, brush off the superfluous colour."† Portman, a Flemish painter before mentioned, gives a similar receipt. "Spread a coat of white lead ground in oil; on this, while quite fresh, powder your azure, or coarse smalt, but chiefly a good bice. Let it dry, and by blowing on it, or by means of a hare's foot, remove the powder which has not adhered. Pass over the surface some white of egg or isinglass or size. Let this dry, and then cover it with a very

* "Notez. Le bleu peult estre couché à destrempe avec colle sur vostre imprimeure à huyle (frottée avec suc d'ail), puis, estant sec, appliquez un bon vernis subtil et fort siccatif. Ainsi vostre bleu ne meurt jamais." — *MS.* p. 11.

† "Après avoir faict toute une draperie d'esmail et blanc de plomb . . . quand tout est frais, saulpoudrez d'ultramarin, et avec une plume fort delicate emportez le superflu." — Ib. p. 96.

drying varnish."* According to Malvasia, Lodovico Carracci attempted this in fresco: "In executing the sky, he scattered or blew dry smalt on the fresh colour."† De Mayerne observes that blue (or, he might have added, any colour) may be thus powdered on various objects, such as carved figures or ornaments in relief. "After having given a coat of white lead, the colour is powdered upon it, and the superfluous dust removed; it never fades, and has a very good effect."‡

A bright orange colour was spread in the same manner, but without the admixture of oil in the preparation, on ornamental boxes manufactured in Italy; the method is thus described in the Venetian MS. "Take of minium two oz., orpiment half an oz., Naples yellow half an oz.; reduce them all to powder and mix them. First colour the box with saffron, tempered with a lixivium, and suffer it not to dry; powder the colour on it, and after-

* "Couchez sur votre labeur du blanc de plomb broyé à l'huyle, sur lequel, tout frais, poudrez d'azur ou de gros esmail, mais principalement de belle cendrée d'azur. Laissez seicher, et en soufflant, ou avec le pied de lievre, abbattez tout ce qui n'est pas adherent. Passez par dessus du blanc d'œuf ou de l'ycthyocolle, ou quelqu'une de nos colles susdites. Laissez seicher et puis couvrez d'un vernix fort siccatif." — *MS.* p. 151. The use of white of egg under varnish is to be condemned, as it frequently becomes opaque, and is very difficult to remove.

† Felsina Pittrice, tomo i. p. 447.

‡ "Ayant donné la ceruse . . . . puis jettant les poudres dessus et soufflant le superflu, jamais ne se guaste et est très beau."

wards [when it is dry], give it a wax varnish, and polish it with a tooth."*

The original object in this practice, as already shown, was to avoid the immixture of blue with oil (that colour being especially liable to change under such circumstances); but the agreeable effect which was the result may have led to the application of the process in other cases. The sparkling appearance of some green and yellow draperies, in Venetian pictures, may have been sometimes produced by thus powdering the bright dry pigments on a ground fitted to retain them. Such a preparation, reduced to a surface by subsequent operations, might then be toned or varnished.

Green. — Hoogstraten regrets that a good green was not so easily to be obtained as other pigments. "Terra verde," he observes, "is too weak, verdigris too crude, and green bice is not durable."† Beurs remarks that greens were usually compounded; it is in such mixtures that the yellow lake has sometimes ill served the intentions of the Dutch painters. De Mayerne frequently notices

* "A fare cholore suoxo a le busole to minio oz. ii., orpimento oz. ÷, zanolino oz. ÷, e fa spolverizare ogni chossa īsieme īprima tinze la busola de zafrano destepado con lorina e nō la lassare asugare e possa miti la polvere sovra dite e possa ge da la zira biancha de sovra, e possa la lissa con el dente de porco."

† "Maer ik wenschte wel, dat wy zoo wel het groen, als het Rood of Geel, tot onzen wil hadden. Terra verde is te zwak, en spaens groen te wreed, en d'assen t'onbestandig." — *Inleyding*, &c. p. 221.

the composition of greens with yellow lake, massicot, and bice. The "verd de vessie" (bladder green, sap green,) is correctly described by him as the juice of berries of the cervispina (Rhamnus catharticus, buckthorn); he supposed that some painters contrived to use it in oil, by means of firm vehicles. The Liliengrün, much used in the 17th century, was made from the purple flowers of the Iris germanica.*

The "distilled verdigris," so often mentioned by early writers, is the salt produced by the solution of common verdigris in distilled vinegar; the crystals thus formed furnish the colour in the most brilliant state. Pacheco recommends that it should be ground in vinegar, and then, when dry, in oil; varnish being added at last.† Leonardo da Vinci remarks that verdigris, though ground in oil, can only last when it is varnished immediately after it is dry; otherwise "it not only fades," he observes, "but may be removed by a wet sponge, especially in humid weather. This is because of its saline nature; it becomes deliquescent in a moist atmosphere."‡

* Scheffer, Graphice, p. 177. Compare Lindley's Vegetable Kingdom, p. 161.

† Arte de Pintura, p. 389.

‡ "Il verde fatto dal rame, ancorchè tal color sia messo a olio, se ne va in fumo . . . s' egli non è subito inverniciato: e non solamente se ne va in fumo, ma s' egli sarà lavato con una spugna bagnata di semplice acqua comune, si leverà dalla sua tavola, dove è dipinto, e massimamente se il tempo sarà umido:

These were the cases in which the resources of the Flemish painters, under the disadvantages of a humid climate, were most needed. The mode of "locking up" verdigris may exemplify the means by which all colours liable to be affected by damp, can be rendered durable. The colour was mixed either with a strong oleo-resinous vehicle (it may be supposed without any admixture of lead), or with varnish only. Modern painters, who find that verdigris and some other colours are not durable when mixed with oil, probably use the vehicle prepared with lead, or in too thin a state. It is, however, quite possible to dispense with oil. The traditional practice of the Netherlands is to mix the colour with a balsam *; in more modern times the balsam of copaiba was used. Bouvier, who recommends an equal quantity of the finest mastic varnish with this ingredient, admits that the colour, thus applied, dries with inconvenient rapidity †; the copaiba, indeed, answers quite well alone. As the early painters were un-

e questo nasce perchè tal verderame è fatto per forza di sale, il qual sale con facilità si risolve ne' tempi piovosi," &c. — *Trattato*, &c., Roma, 1817, p. 124.

* The term balsam was formerly, and is still often, applied to the liquid resins generally. The modern French chemists, however, restrict the word "baume" to those resins, whether liquid or solid, which contain benzoic acid. See Guibourt, Histoire abregée des Drogues simples, Paris, 1836, tome ii. p. 568. 585.

† Manuel des jeunes Artistes, &c. p. 77.

acquainted with this (American) produce, they may have used the purest turpentine resin, the Cyprus balsam, or a resin dissolved in an essential oil. The solid preparation on which the colour was glazed necessarily inclined to yellow: it was required to be perfectly dry, and the communication between it and the verdigris might even be intercepted by a thin coat of varnish. The colour, then applied with a balsam, lasts perfectly *; and this is an example of the superior method of mixing or clothing the particles with a hydrofuge vehicle calculated to defend them, as opposed to the mode of covering the surface only. The latter practice suffices in many cases, but not infallibly with verdigris. It is also thus intelligible how a colour can be durable, and yet require no superficial varnish.

One consequence of applying verdigris mixed with a vehicle of the above description would be, that the surface, in process of time, would become more or less cracked; yet not necessarily to such a degree as to injure the appearance, or affect the

* An eminent foreign professor writes: "Twenty-five years since, when at ——, on the Rhine, I heard of a tradition preserved in the Netherlands, viz. that copaiba balsam mixed with verdigris, instead of oil, preserves the colour in its purity; whereas, if the colour is ground in oil, it soon becomes dark and almost black. I know these results from actual experience; on this account I value the balsam much as a vehicle." The Canada balsam, called the English balm of Gilead, would probably answer as well.

durability, of the work. In the well preserved Van Eyck, in the National Gallery, the green drapery is more cracked than any other part of the picture. *

De Mayerne, who, even in his professional capacity, seems to have missed no opportunity of collecting information on his favourite subject, has recorded a similar method applied to commoner purposes. "Bouffault, a very excellent workman, gave me these secrets on his deathbed. A beautiful green. Take of Venice turpentine two ounces, spirit of turpentine an ounce and a half, mix them, add two ounces of verdigris, reduced to small fragments. Place these ingredients on hot ashes, and let them gently dissolve. Try the colour on glass. Pass it through linen."† Another composition of the kind contained yellow lake, the vehicle being

* The fluid resins, or balsams (which are resins originally held in solution by an essential oil), are more unctuous than resins artificially so dissolved, and, in most cases, are less liable to crack. To correct this tendency, however, a small quantity of wax might be added to them. This ingredient has been recommended, in the instance of Copaiba balsam (to check its tendency to flow), by Lucanus in his *Vollständige Anleitung zur Erhaltung, &c., der Gemälde*, Halberstadt, 1842, p. 12. Compare Knirim, Die Harzmalerei der Alten, Leipzig, 1839, p. 174.

† "Bouffault très excellent ouvrier m'a donné ces secrets siens en mourant. Beau vert. R. Therebenthine de Venise 2 oz., huile de Therebenthine 1 oz. et demie ; meslez, adjoustez vert de gris mis en morceaux 2 oz., mettez sur cendres chaudes et faittes bouillir doulcement. Essayez sur un verre si la couleur vous plait. Passez par un linge."—*MS.* p. 31.

the same. The physician remarks that all transparent colours might be applied (as lackers) in the same way.*

Browns. — Van Mander, taking occasion to condemn the use of lampblack, which, he observes (on the authority of Vasari), produced such bad effects in certain parts of Raphael's picture of the Transfiguration, recommends for the shadows of flesh, terra verde, umber, Cologne earth, and asphaltum.† Hoogstraten speaks only of the browner yellow lakes (brown pink). De Bie mentions umber and asphaltum‡; Beurs, umber and Cologne

* Among the receipts of Bouffault two essential-oil varnishes appear: one, composed of spike oil, sandarac, and mastic, was to be used for red and various colours; the other, consisting of turpentine and the spirit of turpentine, was reserved for greens. This explains the use of the "red and white varnish" mentioned in the early English records (a fixed oil being substituted for an essential oil). The green, which was so much in favour for interior decorations in the 13th and 14th centuries, was no doubt applied with the white varnish, composed either of turpentine or mastic, or both; as the red tint of the sandarac would vitiate its colour.

† "Laet u in 't ghebruyck neffens umbre werden
Aspalten, Ceulsch' eerden, en terreverden."
Het Schilder-Boeck, p. 49. verso.

‡ "Take on your palette the various colours, both choice and ordinary (but such as never fade), tempered with oil; as red or vermilion, some umber, massicot, some ochre, grateful green, lake, yellow lake and ceruse, ultramarine and smalt, azure and minium, white lead and asphaltum."

"Nempt op u plat Palet van alderhande verwen
Goet en gheringh, van aert die nimmermeer vesterven,

earth.* Under the latter term (now appropriated to a distinct colour) may have been included the Cassel or Vandyck brown.†

There can be no doubt that asphaltum was much used by the Flemish painters; it was even prepared in the modern manner. "Asphaltum," says De Mayerne, "is not ground, but a drying oil is prepared with litharge, and the pulverised asphaltum mixed with this oil is placed in a glass vessel, suspended by a thread [in a water bath]. Thus exposed to the fire it melts like butter; when it begins to boil it is instantly removed. It is an excellent colour for shadows, and may be glazed like lake; it lasts well."‡ There are no complaints, in any of the writers above quoted, of the flowing or

Met olie ghemenght, als root oft fermilioen,
Wat omber, masticot, wat oker, heylsaem groen;
Lack, schetgheel en seruys, oulter marin en smalten,
Asuer en menie, loot-wit en oock aspalten."
Het Gulden Cabinet, &c. p. 208.

* Die grosse Welt, &c. p. 183, 186.

† Compare Field, Chromatography (1841). The following passage in this work has reference to the subject now under consideration. "Rubens Brown. — The pigment still in use in the Netherlands under this appellation is an earth of a lighter colour and more ochreous texture than the Vandyke brown of the London shops: it is also of a warmer or more tawny hue than the latter pigment, and is a beautiful and durable brown, which works well both in water and oils and which resembles the brown used by Teniers." — p. 281.

‡ "La spalte ne se broye point: mais on faict une huile siccative avec la lytharge silberglette, et on met la spalte pul-

the cracking of this substance. The painters were perhaps careful to obtain the best specimens of the native bitumen.* An English painter of the last century, who seems to have given much attention to the manufacture of colours, gives the following receipt for the preparation of asphaltum: —

"Antwerp Brown. This brown, I believe, is not to be had in the shops at present, but may be thus prepared; it is a valuable colour from its great depth of tone, has great body, and will undoubtedly stand well. Put some good asphaltum into an iron ladle, set it over a slow fire, taking care that it does not boil over; keep it there till it will boil no more, and it becomes nearly a cinder. When cold, put to it the proportion of half an ounce of sugar of lead to half a pound of the calx; grind it in the strongest drying oil. It will work free and dry well."† This treatment, probably, suffices to prevent its flowing, and may also render it less liable to crack. To obviate the former de-

verisée dans cest huile dans une conserve de verre ou pot à pommade pendu à un filet. On le met sur le feu et le tout se fond comme beurre. Quand il commence à bouillir on l'enleve vistement. C'est une excellente couleur pour ombrager et se glace comme la lacque : ne meurt point."

* Compare Field, Chromatography (1841), p. 283. De Mayerne speaking of brown colours for the shadows of flesh, observes: "Item avec le spalt ou asphaltum qui doit estre choisi pur, très noir et friable."—*MS.* p. 94.

† Williams, An Essay on the Mechanic of Oil Colours, &c. Bath, 1787, p. 43.

fect, the French painters of the school of David added wax to the bitumen, when dissolved in the ordinary way. The practice of enriching browns with transparent yellows is alluded to by the writer above quoted; after objecting to brown pink he observes: "a better colour, and more certain, may be made from No. 9. and No. 18. [the 'Antwerp brown,' and yellow lake]."*

Mummy is noticed in a Dutch work (of the age of Van Mander) which has been already referred to. The colour is described as being fit for "hair and drapery," and as being generally useful.†

A colour which was unknown in the best ages of art (having been discovered in the last century), viz. Prussian blue, furnishes, when burnt, a very fine and durable brown. It requires much filtering to free it from salts. ‡

* Williams, Mech. of Oil Colours, p. 46.

† "Men vint de mommie nergens als in de Apteke, het is een Menschenvleesch, dat constich is ghedroocht eñ bereyt. Sy geeft ooc fijne Haerverwe, en cleedinge, eñ is nut tot veel dingen." — *Secreet-Boeck*, p. 253. The writer is here speaking of water colours.

‡ See Bouvier, Manuel, &c. p. 49. Compare Montabert, Traité complet de la Peinture, tome ix. p. 364. Messrs. Winsor and Newton, having made some experiments in preparing this colour, report as follows: "The best mode of obtaining Prussian brown is by reducing Prussian blue to a fine powder and burning or rather roasting it in a shallow pan on a clear fire. A common iron pan does very well for this purpose. While roasting, the powder should be well stirred and shaken, and, as soon as the desired tint is obtained, thrown into water and repeatedly washed, to free it from a

Blacks. — Ivory and bone black are now scarcely distinguished; but the finer substance undoubtedly yields the best black. The Dutch painters substituted the teeth of the walrus for the Oriental ivory, and were so much in the habit of considering the materials identical in all respects, that Hoogstraten, speaking of the invention of this colour by the ancients, observes : "It is said that the ivory, or walrus, black was invented by Apelles."* Like other writers of the time, he does not omit to condemn lampblack. Under the head of bone, or ivory black, may be mentioned carbonised hartshorn: a collection of specimens of tints (in water colours) is inserted in the Mayerne MS., and among these the "cornu cervium" black is very intense. Among other materials for black pigments may be mentioned black chalk, which, when ground in oil, according to De Mayerne, "dries easily, is unctuous, and spreads well; for painting satins and similar things it is superior to the ordinary [vine] charcoal black, of which blue black is made. It should be kept in water."† Common

quantity of soluble salt which it now contains (some potass, not previously soluble, being set free by the burning). The powder, after being washed, is thrown upon a filter and dried. A variety of tints may be obtained according to degree of burning, and according to the nature of the blue, some samples giving a much warmer tint than others."

* "Men ook zegt dat het yvoir of Walrus zwart van Apelles gevonden is."—*Inleyding*, &c. p. 221.

† "Terre noire ou crayon noir, Black chalke, qui facilement

coal, called by Van Mander "sme-kool" (forge coal), was not only used in water colours, but in oil: it furnishes a brownish tint. De Mayerne observes: "The shadows of flesh are well rendered by pit-coal, which should not be burnt.* This substance is included among dark pigments by other writers of the time. Norgate, whose directions for oil painting correspond in all outward particulars with the Flemish methods, says: "Small cole or charcole [carbonised vine stalks] is a blew black and sea-cole makes a red black and soe called."† The early Flemish illuminators, for example, Gerard of Bruges, also used the warm black prepared from common coal (schmiedekohlenschwartz).‡

Such were the principal colours employed by the painters of the Netherlands. The modes of purifying the materials by washing; their preparation, in certain cases, with peculiar ingredients to insure

se seiche, est gras et s'estend fort bien, et vault mieux que le charbon commun dont on fait le bleu noir ou noir bleu, pour peindre satin et semblables choses; se doit guarder dans l'eau." —*MS.* p. 1.

* "Les ombrages se font excellens pour charneures avec le charbon de pierre qui ne doit point estre bruslé."—Ib. p. 94. Compare Beurs, Die grosse Welt, &c. p. 6. 183.

† Norgate MS.

‡ The treatise of "Gerhard zur Brügge" was published by Willhelm Goeree, and afterwards translated into German, under the title Illuminir- oder Erleuchterey-Kunst, &c., Hamburg, 1678. For the list of colours see p. 3. 5. The yellows include gamboge.

their durability; and the methods of applying them, having been briefly noticed, the more general means adopted to protect them, or "lock them up," will now be described.

The effect of moisture on verdigris, even when the colour is mixed with oil, as noticed by Leonardo da Vinci, shows that such a vehicle, unless it be half-resinified, affords no durable protection to some colours in humid climates; and the efficacy of resinous solutions, as hydrofuges, is at once exemplified by the fact that they answer the end which (unprepared) oil alone is insufficient to accomplish. Colours which are easily affected by humidity require to be protected according to the extent of the evil. Whatever precaution of this kind was requisite in Italy was doubly needed in Flanders. The superficial varnish which sufficed in the extreme case referred to by Leonardo was incorporated with the colour by the oil painters of the North. So, in proportion as the Flemish painters adopted a thinner vehicle, the protecting varnish was applied on colours which the Italians could safely leave exposed, at all events till a general varnish was spread over the work. It will be remembered that this last method was unnecessary in the original Flemish process, according to which the colours, being more or less mixed with varnish and being painted at once, remained glossy, and needed no additional defence.

The following examples of the later practice in

Flanders occur in De Mayerne's notes. After describing the mode of rendering colours dull, and causing the oil to remain undermost by the addition of spike oil, the physician adds: "As soon as the colour is dry, pass the varnish immediately over it."* He elsewhere remarks: "Indigo is used in oil, but it fades without the varnish. . . . . It makes a green with dark yellow lake; upon this also the varnish should be spread; the colour then lasts." † Speaking elsewhere of verdigris glazed over other tints, he repeats: "Forget not to add the varnish."‡ Lastly, after describing the composition of a preservative of this kind, he adds: "The varnish answers very well spread over the whole surface of a picture; thus the colours are protected, and do not fade."§ This observation would have appeared a truism in Italy; but, coming from a writer who was conversant in the technical habits of the Northern schools, it is well worthy of notice. It shows that the practice of varnishing pictures was not universal in those schools, even in De Mayerne's time. The use of the

* "Quand on travaille du bleu il fault . . . y mesler un peu de huile d'aspic ou de petrole et aussi tost qu'il est sec passer incontinent le vernix par dessus." — *MS.* p. 97. verso.

† "Indigo s'use à huile mais il meurt sans le vernix, on en faict . . . un vert avec schitgeel obscur sur quoy fault passer le vernix et il dure."— Ib. 95.

‡ Ib. p. 9.

§ "Le vernix fait fort bien passé par dessus tout un tableau ainsi les couleurs se conservent et ne meurent point."— Ib. p. 59. verso.

original Flemish vehicle, or an equivalent to it, still rendered such an addition, in many cases, unnecessary.

The essential-oil varnish, the composition above alluded to, was probably of Italian origin; it was an almost necessary protection to pictures painted with a diluted vehicle, yet a thin coat of the resinous solution was found to be sufficient for this purpose in a dry climate. The period when this composition was introduced in the North is unimportant; but, if adopted when the oleo-resinous vehicle was no longer generally employed, it would be used in a thicker state than in Italy, or, which is the same thing, several layers would be applied: the chief object being to protect the colours, by a hydrofuge coating, from the effects of moisture and air. Hence, as might be expected, the Italian system of varnishing, when once adopted on this side the Alps, was not unfrequently abused. We find Venetians, in the seventeenth century, ridiculing the extreme polish of some "foreign pictures."* One cause of this excess was the difficulty of preserving such compositions from chilling, and even from speedy decay, in a humid climate. The remedies for this, such as they were, will be noticed in due order.

The Italian varnish consisted of an essential oil and a balsam: to these a resin was sometimes added.

* Boschini, La Carta del Navegar Pitoresco, Venezia, 1660, p. 338.

Such compositions, serving to protect the colours and to make them bear out, last perfectly well in Italy when they are carefully prepared.

Armenini describes the essential-oil varnish which was used by Correggio and Parmigiano. His authorities, he informs us, for so designating it were the immediate scholars of those masters; and he states that he had himself witnessed its general use throughout Lombardy by the best painters. His description is as follows. "Some took clear fir turpentine, and dissolved it in a pipkin on a very moderate fire; when it was dissolved, they added an equal quantity of petroleum (naptha), throwing it in immediately on removing the liquefied turpentine. Then stirring the composition with the hand, they spread it, while warm, over the picture, which had been previously placed in the sun and was somewhat warmed. They were thus enabled to spread the varnish over every part of the surface equally. This varnish is considered the thinnest, and [at the same time] the most glossy, that is made."*

* "Alcuni dunque pigliavano del oglio d' abezzo chiaro, e lo facevano disfare in un pignattino à lento fuoco, e disfatto bene, li ponevano tanto altro oglio di sasso, gettandovelo dentro subito che essi lo levavano dal fuoco, e mesticando con la mano così caldo lo stendevano sopra il lavoro prima posto al sole, e alquanto caldo, si che toccavano con quella da per tutto egualmente, e questa vernice è tenuta la più sutile, e più lustra d' ogni altra che si faccia; io ho veduto usarla così per tutta Lombardia da i più valenti, e mi fu detto che così era quella adoprata dal Correggio e dal Parmigiano nelle sue opere, se

The turpentine resin here mentioned is the produce of the silver fir (Abies pectinata or taxifolia)*; it is obtained in perfection on the Italian side of the Tyrolese Alps. It is perfectly clear and colourless, which is not the case with Venetian turpentine (the produce of the larch)†; the latter may, however, be purified in the modes before described. Venetian turpentine, perhaps from the influence of its name, seems to have been chiefly used by the Flemish painters. It was selected as light in colour as possible, and, when mixed by heat with the essential oil of turpentine, care was taken not to allow the latter to evaporate; for, when this happened, the varnish was thick and less drying. The following are examples:—

"Incomparable Varnish. — Take the clearest Venice turpentine and colourless essential oil of turpentine, equal quantities. Place them in a vessel on

egli si può credere à quelli che li furono discepoli."—*De' veri Precetti della Pittura*, in Ravenna, 1587, p. 128. For the best mode of preparing this varnish see the second note at the end of this chapter.

* Lindley, Vegetable Kingdom, p. 229. Compare Guibourt, Histoire abrégée des Drogues simples, Paris, 1836, tome ii. p. 576. This is the "nobilior lachryma abietis" mentioned by Cardanus (*De Subtil.* lib. viii.), and so described by him as compared with the inferior turpentine of the larch and of the "picea" or Abies excelsa. Linnæus, it is to be observed, calls the Abies pectinata, Pinus Picea; and the Abies excelsa, Pinus Abies. (*Guibourt*, ib. p. 577.)

† Guibourt, p. 575. Lindley, p. 229. The Strassburg turpentine, also the produce of the Abies pectinata, is not so pure and colourless as that obtained on the Italian side of the Alps.

a very moderate fire; and, as soon as you see bubbles form round the surface, withdraw it quickly from the fire: the varnish will boil of itself. When cold, keep it in a phial. This varnish may be spread on all colours, particularly on verdigris, on face tints, and all others. It preserves all colours; they thus never fade, not being liable to be altered by the air. It dries in three hours, and the advantage of it is, that it is possible to work and paint on it afterwards."*

De Mayerne, who records this receipt, probably obtained it from his friend Vandyck, as another contemporary authority thus describes it: "Sir Nathaniel Bacon's vernish for oyl pictures. Allsoe it was the vernish of S^r^ Anthony Vandike, which he used when he did work over a face again the second time all over, otherwise it will hardly dry. Take two parts of oyle of turpentine and one part of Venice turpentine; put it in a pipkin and set it over the coles, on a still fire, untill it begin to buble up: or let them boyl very easily, and stop it close

* "Vernix incomparable.—R. Therebentine de Venise très claire, huile de Therebentine blanche, an. mettez en un pot sur un petit feu et quand vous verrez que des bulles se feront à la circonference tirez vistement du feu le vernix bouillera de soi mesme. Estant refroidy guardez le dans une fiole. Le vernix se peult coucher sur toutes couleurs specialement sur le verd de gris sur les visaiges et tout aultre. Il conserve toutes couleurs qui ne meurent jamais ne pouvant estre alterées de l'air. Il seiche dans trois heures et le bon est que par après on peult travailler et peindre dessus." — *Mayerne MS.* p. 95.

with a wett woollen cloth untill it be cold. Then keep it for your use; and when you will use it, lay it but warm, and it will dry."* The damp cloth was evidently intended to prevent the evaporation of the essential oil. Vansomer also gives the following directions. "In preparing the ordinary painter's varnish (which is made with the colourless oil of the clearest Venice turpentine and the turpentine itself, in a water-bath), take care that the spirit does not evaporate in any way, for otherwise the varnish does not dry well nor so quickly. The evaporation may be easily prevented by using a circulating vessel, or a matrass with a very long neck."† A description of the same varnish appears under the name of Van Belcamp, a painter who was employed in copying pictures for Charles I. "An excellent Varnish.—Make the common painter's varnish with very clear Venice turpentine (or, at all events, the least yellow that can be found) and the rectified essential oil of turpentine. It should be made in a sand-bath, without allowing the spirit to evaporate much, for fear the varnish should become

* Norgate MS.

† "En la preparation du vernix ordinaire des peintres (qui se faict avec l'huile blanche de la plus claire Therebentine de Venise et la Therebentine mesme dans le B. M.) il fault adviser que l'esprit de Therebentine ne s'exhale en aulcune façon, aultrement le vernix ne se seiche pas bien ni si tost. Cela se fera facilement ou dans un vaisseau de rencontre ou dans un matras dont le col soit fort long."—*Mayerne MS.* p. 154. verso.

too thick."* De Mayerne, in some general observations on varnishes, remarks: "The most usual [ingredients] for delicate varnishes are, the essential oil of turpentine, spike oil, or petroleum, with turpentine itself, which, although unctuous and slow in drying, dries at last and prevents the varnish from cracking. Nota: very little is necessary; the tenth or twelfth part."† This would indeed be a "delicate," but not very durable, composition. It was,

* "Vernix excellent.—Faittes le vernix commun des peintres avec Therebenthine de Venise très blanche ou au moings la moings jaulne que pourrez trouver et l'huile blanche de Therebenthine redistillée pour mieux faire, ou tirée la premiere fois avec eau. Cecy se doibt faire sur la sable sans souffrir longtemps l'exhalaison de l'esprit de peur que le vernix ne s'espaississe par trop."— *MS.* p. 143. verso. The defect here alluded to, which involved slow and imperfect drying, is corrected by De Piles (or perhaps his editor, Jombert) by the addition of some clear lac varnish. The proportions are, one oz. of turpentine, two oz. of spirit of turpentine, and half an oz. of the lac resin; to be dissolved in a water-bath.

† "Les plus ordinaires pour les vernix delicats sont les huyles de therebenthine, d'aspic et le petroleum avec la therebenthine mesme qui, quoyque grasse et lente se seiche à la parfin et empesche le vernix de s'escailler. Il y en fault fort peu la 10ieme ou 12ieme partie." — Ib. p. 47. verso. Van Mander relates that Icos van Cleef, who, in his youth, was one of the best colourists of his time, when he became deranged "varnished his clothes, his hood, and cap with turpentine varnish, and went in this state shining through the streets." "Hy vernistede met Terbentijn vernis zijn cleeren, zijn cappe en zijn bonnet, en gingh soo al glimmende achter straet." — *Het Schilder-Boeck*, p. 226. verso. The anecdote is a proof that turpentine was, originally, the chief substance used in the composition of essential-oil varnishes. Van Cleef died about 1556.

however, a varnish of this kind, or but little stronger, which, when passed over a dry picture before repainting, answered all the end of "oiling out," without its inconveniences, viz. the probability of yellowing. The thin resinous film, if left in any part of the work, undergoes no alteration: though drying rapidly, it leaves a comparatively fresh surface which takes the colour easily; and, having scarcely any body, does not affect the superadded tints. The application of such a varnish by Vandyck, in this way, has been already noticed.

In the Netherlands, the painters were in the habit of increasing the body of this composition by the addition of mastic. The "peintre Flamand" quoted in a former chapter, whom De Mayerne met at "Lord Newport's," said that he commonly used for his picture varnish, "very light turpentine, very clear spirit of turpentine, and mastic."* The physician elsewhere gives the following description. "Very good Varnish used by M. Adam, clear as water, and drying in three hours.—Take of very clear Venice turpentine an oz. and half (this is the best proportion, although sometimes he takes as much as an oz. and three quarters). Place it in a glass vessel, in a basin of hot water, on a small furnace. The turpentine being melted and warm, have ready half an oz. of well cleansed mastic tears

* "Son verny ordinaire pour tableaux est faict avec therebenthine fort blanche huile de therebenthine fort claire et mastic."—*MS.* p. 161.

reduced to a fine powder; throw this into the turpentine, stirring till the mastic is dissolved. Have ready in another vessel four oz. of very light and very clear spirit of turpentine; warm this also, covering the vessel with a glass cover. Throw it into the melted turpentine and mastic, mix duly, and take the vessel from the fire. To apply this, your picture, well cleansed, should be placed in the sun till it gets warm. Spread your varnish upon it warm; let it dry [in the sun]."* De Mayerne has added in a marginal note, "Vidi, optimum."

Hoogstraten also describes a similar composition. "Our varnish, consisting of turpentine, spirit of turpentine, and pulverised mastic dissolved, is sufficiently convenient for our works."† The varnish

* "Vernix très bon de M. Adam, clair comme eau et siccatif en trois heures. — R. therebenthine de Venise fort claire une oz. et demie (qui est la meilleure proportion encor que quelque fois il en prenne jusqu'à une once et trois quarts). Mettez la dans une conserve de verre dans un bassin d'eau chaude sur un petit fourneau et la therebenthine estant fondue et chaude ayez demy once de mastic en larmes bien purgé mis en poudre subtille laquelle jetterez dans la therebenthine remuant tousjours tant que le mastic soit fondu. Ayez en une autre conserve quatre oz. d'huile de therebenthine très blanche et très claire et la faictes pareillement chauffer, le vaisseau couvert d'un couvercle de verre. Versez la avec la therebenthine et le mastic fondu reduites a bon escient et ostez de la chaleur. Pour l'appliquer vostre tableau bien net soit mis au soleil tant qu'il s'eschauffera couchez vostre vernix sur icelui chaud, laissez seicher." — *MS.* p. 141.

† "Onzen vernis van Terpentijn, terpentijn oly, en gestooten mastix gesmolten, is bequaem genoeg tot onze werken." — *Inleyding*, &c. p. 223.

last noticed, under the name of Adam, gives the usual proportions of the ingredients here named. The testimony of Hoogstraten on this and other points is important, because he was the scholar of Rembrandt.*

* "Rembrandt, after the death of my father Theodore, my second master." — *Inleyding*, p. 257.

"On one occasion when I was troublesome to my master Rembrandt, by asking him too many questions respecting the causes of things, he replied very judiciously: 'Try to put well in practice what you already know; in so doing you will, in good time, discover the hidden things which you now inquire about.'" — Ib. p. 13

NOTE

ON THE USE OF TRIPTYCHS, ETC.

The practice of enclosing pictures in cases with doors, called diptychs, triptychs, or polyptychs, accordingly as they had one two, or many leaves, is to be traced to the use of portable altar-pieces. The above terms were originally applied to books (libelli) composed of a few tablets or leaves, generally of ivory. The more ornamented kinds were called simply diptychs, because they consisted of ivory covers only, in which leaves of the same substance or of vellum might be inserted. An inscription published by Gruter speaks of "pugillares membranaceos operculis eboreis." The consular diptychs, for example, were nothing more than ivory covers in which the book or libellus itself might be enclosed. They were presents distributed by the consul on his entering office, and generally exhibited the portrait and titles of the new dignitary on one side, and a mythological subject on the other. The covers were carved on the outside, and were plain within.

At a very early period in the Christian era similar diptychs of a larger size were employed in the service of the church. They sometimes contained the figures of saints and martyrs on the inside (probably as a means of concealing them in times of persecution), and were subsequently exhibited on the altar open. The circumstance of the principal representation being on the inside, instead of the outside, constitutes the distinction between the sacred and the consular diptychs.

Such was the origin of the medieval altar-piece, the size of which long remained small as compared with later decorations of the kind. The Roman diptychs are generally rectangular, but sometimes (as in the instance of that representing the apotheosis of Romulus, a work probably of the fourth or fifth century) the upper edge is finished in an ornamental form approaching that of a tympanum. This enrichment, as a matter

of course always followed the architectural taste of the period: Byzantine diptychs have often circular tops; but those of later Italian and German origin commonly finish in various forms of Gothic; the early decorated style occurring most frequently.

With regard to the number of doors, the most ancient form, consisting of two leaves, or one door, is now the least common: the triptych, or centre picture with two doors, the most so. The Ghent altar-piece by the Van Eycks is a polyptych: it originally consisted of two tiers of leaves, seven above and five below. Of the seven, three were fixed, and the portions closing upon them were divided on each side into two subjects. Of the five, one large centre subject was fixed, and two leaves (one on each side) closed upon it. The outside of the doors was, almost universally, painted in chiaroscuro, probably from a traditional imitation of the ancient sculptured back of the original diptych.

When the case was spread open it generally exhibited (at least in older examples) a centre subject and single figures of saints on the doors. In Italy the doors appear to have been left permanently open at an early period, since various altar-pieces exist, executed in the fourteenth or first half of the fifteenth century, which, though representing a centre with doors, really consist of immovable panels, the hinges being omitted. In Flanders, on the contrary, even to the time of Rubens, the doors were real, and could be closed upon the principal picture. The form being at length still more simplified in Italian altar-pieces, the single figures of saints were no longer separated by compartments; but were brought into the centre picture, which generally represented a "Majesty," or enthroned Madonna. This seems to have been the origin of the groups of saints, belonging to different periods, which are often introduced together in altar-pieces. (See Buonarruoti, *Osservazioni sopra alcuni Frammenti di Vasi antichi di Vetro, &c.*, Firenze, 1716, p. 231, 257.)

NOTE

ON THE VARNISH PREPARED FROM THE OLIO D' ABEZZO.

An Italian writer of the present century, who had given great attention, during a long series of years, to the technical part of painting, being convinced of the correctness of Armenini's statement respecting this varnish, endeavoured to prepare and use it. He at first failed, from some defect in the materials; he thus describes his more successful experiments. "I thought it possible that the liquid fir resin (olio d' abezzo) might not have been good of its kind, or that it might have been mixed with [Venetian] turpentine or some similar substance; I therefore, by means of a friend, procured from the Valtellina some olio d' abezzo which was pure, limpid, and of the finest quality. Not satisfied with this, I caused some clear petroleum to be rectified by a chemist, so as to be limpid, transparent, and fluid as water. With these I composed the varnish. I employed it on some old paintings, and on some studies then recently executed by myself: the following is the result of my trials."

The writer states that he applied the varnish to four old pictures which were in an arid state; he proceeds: "After an interval of more than thirty years these pictures have not only retained their freshness, but it seems that the colours, and especially the whites, have become more agreeable to the eye; exhibiting, not indeed the lustre of glass, but a clearness like that of a recently painted picture, and without yellowing in the least. I also applied the varnish on a head of an academy figure painted by me about five and twenty years since. On the rest of the figure I made experiments with other varnishes and glazings. This head surpasses all the other portions in a very striking manner; it appears freshly painted and still moist with oil, retaining its tints perfectly. The coat of varnish is extremely thin, yet on gently washing the surface it

has not suffered. The lustre is uniform; it is not the gloss of enamel or glass, but precisely that degree of shine which is most desirable in a picture."

He then attributes the preservation of Correggio's pictures, and the clearness of the tints, in a great measure to the use of this varnish. He continues: "Such results are not surprising, when the nature of the ingredients in question is considered. The fir resin is transparent and lustrous; mastic is not to be compared to it in these qualities, being naturally opaque. The rectified petroleum, again, is extremely thin; it evaporates easily and dissolves the resin perfectly. The varnish, when spread on a picture, thus dries almost instantaneously, so that no dust can attach itself to the surface. The mode of spreading the varnish contributes also to its perfect effect; it should be applied warm, and the picture should also be warmed, either in the sun or at the fire. By attending to this, the composition may be applied in the thinnest and most transparent state. The fir resin" he adds, "should be dissolved by a very slow and gentle heat; warm [wood] ashes almost suffice for this purpose. It is then taken from the fire and the rectified petroleum is poured on it, being stirred well with a clean stick. With respect to the proportions, experience will teach this: it is always better to put more essential oil than resin, because by this means the varnish may be spread very thinly, and it may be always repeated if necessary. Thus the essential oil quickly evaporates, and the resin remains spread in a fine transparent and uniform film. Experience proves that the ingredients thus applied do not yellow, nor does the surface grow dull; while the colours are preserved more perfectly than by any other varnish." — *C. Verri, Saggio elementare sul Disegno, &c., con alcune Avvertenze sull' Uso de' Colori ad Olio,* Milano, 1814, p. 138.

CHAP. XIII.

PRACTICE OF LATER MASTERS.

The characteristics of the early Flemish practice in oil painting, induced by an attention to the effects of the climate in which it arose, are still to be recognised in some of the best productions of the school during the seventeenth century, notwithstanding the influence of Italian examples. The chief peculiarities in the original process, which then survived, may be recapitulated as follows:—

Those who adhered to the early system generally determined the entire composition of their subject before the picture itself was begun; for this purpose they made numerous sketches and studies. They preferred a white ground, which was rendered non-absorbent in a mode before described; and, having completed the outline upon it, they allowed portions of the finished work to exhibit that ground underneath. A general tint — pale flesh-colour, brown, or even grey*—which was sometimes passed

* Many of the sketches, and not unfrequently the finished works, of Rubens are painted on a light grey preparation, through which the white priming is visible.

over the ground, was intended only to assist the middle tints of the picture, and never excluded the still lighter priming. The above process was more especially followed when the picture was executed on wood (a material which the Flemish masters commonly employed), the defence of an impervious substratum allowing of a thinner application of the colour. The shadows, unmixed with opaque colours, were always inserted first. The painting was executed as much as possible at once, and therefore, occasionally, in portions at a time. This last system was, by degrees, so far departed from, that the design, especially when of large dimensions, was dead-coloured from a finished sketch, so as to avoid alterations in the more complete work.

Later painters, instead of the original white ground, employed a dusky priming, serving as a middle tint for the shadows rather than the lights, and not exhibiting a light preparation within it. An "Imprimeur Wallon," residing in London in De Mayerne's time, prepared cloths with a tint composed of white lead, black, red ochre, and a little umber*: the same ground (the umber excepted) is described in Jombert's De Piles.† A preparation of this kind is frequently observable in pictures by the Dutch masters; Teniers is, however, an exception; he still preferred the white ground, over which he passed a light brown trans-

* MS. p. 5. † Elémens, &c. p. 129.

parent tint. In this use of the light priming, as in many other points, he followed the example of Rubens.*

With regard to vehicles, the same ingredients and processes which were common in the earliest days of the Flemish and German oil painting had survived, and were still adopted by many at the period now under consideration. The mode of rendering oil clear and drying by means of calcined bones (to mention one of the original expedients) is to be traced from the Strassburg MS. in the fifteenth century, through the treatise of Boltzen in the sixteenth, to the *Secreet-Boeck* published at Dort at the commencement of the seventeenth †; and the

* In small works, both of the Italian and Flemish schools, one coat of fine gesso sufficed. Pictures on wood by Teniers, when transferred to cloth or veneered, exhibit a perfectly white ground, unstained with oil.

† After speaking of a varnish composed of one lb. of pulverised mastic added to three lb. of linseed oil, the writer continues: "Here observe, if you wish the varnish to dry quickly take calcined sheep's bones, pound them to powder as fine as dust, sift this through a hair sieve, and then stir a little, about the size of a walnut, into the varnish; let it boil once with this ingredient, it will then dry quickly on whatever surface you apply it." "Ghy sult al hier noteren dat soe verre als ghy den Vernis wilt hebben dat hy strack drooghe, soe neempt witte gebrande Schaepsbeenders, stootse tot poeder so cleyn als stof, buydelt hem door eenen haeyren sift, ende roert daer van onder den Vernis ontrent soo veel als een note groot, ende laet hem daer mede eens opsieden soo sal sy haestich drooghen, tsy waer op ghy hem strijcht." — *Secreet-Boeck*, tot Dordrecht, 1601, p. 223.

process is again recommended by De Mayerne in the age of Rubens and Rembrandt. So with regard to amber: its employment as a vehicle for colours is noticed in De Ketham's MS., by various German writers of the sixteenth century, and in the Dort publication above referred to; while the modes of dissolving the substance, and of using it in painting, are repeatedly and amply discussed by De Mayerne.

The use of oleo-resinous vehicles, the effect of which rendered a final varnish, at least for many years, needless, was still common in Flanders in the seventeenth century. The pigments, consolidated by the addition of the resinous ingredient, were diluted when necessary with an essential oil, but not (in the original method) to such an extent as to render the surface dull. The consistence of the vehicle itself, except when employed for rich shadows, was at all times such as to be compatible with the sharpest execution. Its drying tendency was sometimes assisted by the addition of metallic oxides; thus securing the colours as soon as possible from the effects of moisture and dust; and the desiccation was completed by exposing the picture, with due precautions, to the action of air and the warmth of the sun.

When a thinner vehicle was used, the essential-oil varnish of the Italians was, almost necessarily, adopted. This consisted, as has been seen, of a liquid resin or balsam dissolved or diluted in spirit

of turpentine or other volatile oil; to this composition, which, it seems, was too thin for a northern climate, mastic was afterwards added; till, at last, as modern experience shows, the latter ingredient entirely superseded the original fir or larch resin.

The oleo-resinous medium had been gradually confined, in Italy, to colours which had little substance, or, when it was used throughout the work, to pictures in exposed or humid situations. In proportion as the authority of the Italian methods prevailed on this side the Alps, the same restrictions were observed in the use of such vehicles; thus superseding the early practice (of Northern origin) from which the Italian painters had found it possible and convenient to depart. The editor of De Piles states that colours ground in a composition of linseed oil and mastic are durable in the open air.* This, which is scarcely to be affirmed with regard to a southern climate, is certainly not true in reference to a northern one.

* "Huile à broyer les couleurs pour résister aux injures de l'air. — Prenez deux onces de mastic en larmes bien claires et broyez les avec de l'huile de lin. Versez ce mêlange dans un pot vernissé que vous mettez sur le feu: vous y ferez fondre peu à peu le mastic, remuant toujours la matiere; puis vous laisserez refroidir cette huile et regarderez si le mastic est fondu et bien incorporé avec l'huile. Alors vous vous en servirez pour broyer vos couleurs, lesquelles résisteront à l'air, et vous en peindrez les ouvrages qui doivent être exposés à l'injure du tems." — *Elémens*, &c. p. 143.

The method proposed is an instance of the change which the original process, or rather its applications, had undergone: the contrivances to render oil painting proof against damp, which may have been adopted only in extreme cases in Italy, were, at first, ordinary expedients in Flanders; it will be remembered that the composition in question, or an equivalent to it, was a usual vehicle in the early German and Flemish practice.

With respect to the pigments in use, the omission of Naples yellow by the Flemish and Dutch writers on art, even during the seventeenth century, may be considered sufficient evidence that it was not then commonly employed in the Netherlands. A less durable yellow of the lighter kind, viz. massicot, was familiar; but the finest varieties of ochre were recommended in preference. Transparent yellows were very generally, and sometimes too fearlessly, employed. Vermilion and lake were, from first to last, admitted as the chief materials for imitating the florid complexions of the North; and, among the colours peculiar to the later painters, may be mentioned a rich brown, which, whether an earth or mineral alone, or a substance of the kind enriched by the addition of a transparent yellow or orange, is not an unimportant element of the glowing colouring which is remarkable in examples of the school. Such a colour, by artificial combinations at least, is easily supplied; and it is repeated, that, in general, the materials now in use are quite as

good as those which the Flemish masters had at their command.

But it is no less certain that the final preparation of these and other materials for oil painting was more carefully attended to by painters themselves, or their immediate assistants, at the period referred to than at the present day. The examples which have been given in the preceding chapters, and which were copiously selected partly with the view of affording some insight into the ordinary habits of the older masters of the art, sufficiently prove that those masters disdained not to superintend operations which were calculated to insure the durability of their productions. They appear to have been indebted to the colour-merchant for genuine materials only, and they spared no pains to obtain such of the best quality, knowing that the fit preparation of them for the palette was in their own power.* Van Mander recommends that

* Northcote observes: "It was of advantage to the old school of Italian painters that they were under the necessity of making most of their colours themselves, or at least under the inspection of such as possessed chemical knowledge, which excluded all possibility of those adulterations to which the moderns are exposed. The same was also the case in England, till the time of Sir Godfrey Kneller, who, when he came to this country, brought over a servant with him whose sole employment was to prepare all his colours and materials for his work. Kneller afterwards set him up as a colour-maker for artists ; and this man's success, he being the first that kept a colour shop in London, occasioned the practice of it as a trade.

"Sir Joshua was ever careful about procuring unadulterated

choice colours should be laid up in store; intimating that the opportunities of procuring them were to be seized when they occurred.* At the same time, the range of pigments remained limited; the object was rather to obtain the usual materials good than to encourage the introduction of novelties.

Among the technical improvements on the older process may be especially mentioned the preservation of transparency chiefly in the darker masses, the lights being loaded as required. The system of exhibiting the bright ground through the shadows still involved an adherence to the original method of defining the composition at first; and the solid painting of the lights opened the door to that freedom of execution which the works of the early masters wanted.

That the general principles and, to a great extent, the methods above described were followed in

articles of every sort, and has often desired me to inform the colour-man that he should not regard any price that might be demanded, provided the colours were genuine." — *The Life of Sir Joshua Reynolds*, &c. vol. ii. p. 21.

Some incidental remarks in De Mayerne's notes tend to show that there were persons exclusively employed in the manufacture of painters' materials, in London, before the time of Kneller.

* ——— "En indient u mach ghebeuren,
Wilt u van langher handt van schoon coleuren
Passen te voorsien, en by houden leeren,
Als die de Const houdt in weerden en eeren."
Het Schilder-Boeck, p. 50

the school of the Van Eycks has been established by abundant evidence: the directions of Van Mander and others, which have also been quoted, prove that those methods were still common in Flanders at the commencement of the seventeenth century. It remains to show that Rubens, the highest authority in that school, still sanctioned the same process by his example; while, in adopting those elements of the Italian practice which were compatible with it, he formed a more perfect manner than that which the painters of his own country had generally followed, and carried the principles of the early Flemish masters to a higher perfection.

It has never been ascertained from what source Descamps derived the "maxims" which he attributes to Rubens*; but the practice inculcated by them is so entirely borne out by the evidence of the master's works that there can be no doubt of their authenticity. The same observation is applicable to the account of the method of Teniers given by the same writer. Of Rubens he observes:

"The pictures of his scholars, which were retouched [by the master], are easily recognised. They want the transparent depths which this great painter turned to such good account. . . . In the pictures of Rubens the obscurer masses have

* It may be conjectured that the authority was Largilière (the master of Descamps), a painter devoted to the principles and methods of the Flemish masters.

scarcely any substance of colour: this was one of the grounds of criticism with his enemies, who objected that his pictures were not painted with sufficient solidity, that they were little more than a tinted varnish, calculated to last no longer than the painter. We now find that this criticism had no just foundation. Every thing at first, under the pencil of Rubens, had the appearance of a glaze only; but although he often produced tones by means of the [light] priming of the cloth [or panel] that priming was, at least, entirely covered with colour. . . . One of the leading maxims respecting colouring, which he repeated oftenest in his school, was, that it was very dangerous to use white and black. 'Begin,' he was accustomed to say, 'by painting your shadows thinly: be careful not to let white insinuate itself into them; it is the poison of a picture except in the lights: if white be once allowed to dull the perfect transparency and golden warmth of your shadows, your colouring will no longer be glowing, but heavy and grey.' After having given this very necessary caution respecting the shadows, and having pointed out the colours which can injure their effect, he continues thus: 'The case is different in regard to the lights; in them the colours may be loaded as much as may be thought requisite. They have substance: it is necessary, however, to keep them pure. This is effected by laying each tint in its place, and the various tints next each other, so that, by a slight

blending with the brush, they may be softened by passing one into the other without stirring them much. Afterwards you may return to this preparation, and give to it those decided touches which are always the distinctive marks of great masters."*

* "Les tableaux de ses E'lèves qui ont été retouchés, sont aisés à reconnoître; on n'y trouve pas les transparents dont ce grand Peintre tiroit si bien parti: . . . Il semble que dans les tableaux de Rubens les masses privées de lumière ne soient presque point chargées de coleur: c'étoit une des critiques de ses ennemis, qui prétendoient que ses Tableaux n'étoient point assez empâtés, et n'étoient presque qu'un vernis colorié, aussi peu durable que l'Artiste. On voit à present que cette prédiction étoit très-mal fondée. Tout n'avoit d'abord, sous le pinceau de Rubens, que l'apparence d'un glacis; mais quoiqu'il tira souvent des tons de l'impression de sa toile, elle étoit cependant entièrement couverte de couleur: . . . . Une des maximes principales qu'il répétoit le plus souvent dans son E'cole, sur le coloris, étoit, qu'il étoit très-dangereux de se servir du blanc et du noir. 'Commencez,' disoit-il, 'à peindre légèrement vos ombres; gardez-vous d'y laisser glisser du blanc, c'est le poison d'un tableau, excepté dans les lumières; si le blanc émousse une fois cette pointe brillante et dorée, votre couleur ne sera plus chaude, mais lourde et grise.' Après avoir demontré cette précaution si necessaire pour les ombres, et avoir désigné les couleurs qui peuvent y nuire, il continue ainsi: 'Il n'en est pas de même dans les lumières, on peut charger ses couleurs tant que l'on le juge à propos: Elles ont du corps: il faut cependant les tenir pures: On y reussit en plaçant chaque teinte dans sa place, et près l'une de l'autre, ensorte que d'un leger mêlange fait avec la brosse ou le pinceau, on parvienne à les fondre en les passant l'une dans l'autre sans les tourmenter, et alors on peut retourner sur cette préparation et y donner des touches décidées qui sont toujours les marques distinctives des grands maitres.'" — *Les Vies des Peintres Flamands*, &c., Paris, 1753, tome i. p. 310.

Mansaert, speaking of Rubens's picture of the Elevation of the

It is unnecessary to enumerate the particulars in which such a method agrees, in principle, with that of the early Flemish masters; one circumstance, however, should not be overlooked. It is well known that Rubens, with all his facility, rarely omitted to decide his composition, and prepare a coloured sketch of the effect before the picture itself was begun.* This method was still more requisite when his scholars were entrusted with the preparation of large works from his finished designs. His drawings and studies are innumerable; and one of the objects which he proposed, in thus arresting the forms, was to be enabled to insert the shadows on the light ground at once, and to avoid alterations. It is not to be supposed that a painter of such exuberant invention and consummate dexterity would at all times abstain from changes; his works are by no means free from them: but, in general, such corrections have been made in the lighter masses, where the exclusion of the ground was unimportant. This solidity in the lights is one of the points in which the Italian

Cross, in the Church of St. Walburge at Antwerp, observes: "Dans plusieurs endroits elles [les couleurs] y sont employées fort épaisses et fort grossières, et dans d'autres fort legères, de sorte qu'on y voit à travers le fond du panneau, principalement dans les grandes parties d'ombre." — *Le Peintre amateur et curieux*, p. 250.

* "Nous avous plusieurs esquisses de lui, faites pour le même Tableau. On en connoit trois en France du Tableau d'Autel des Augustins d'Anvers." — *Descamps, Peintres Flamands*, p. 313.

system was blended by Rubens with the early Flemish method.

The caution, in the above passage, respecting the use of white and black, has evidently reference to the warm transparent shades only. Blackness and a leaden opacity in shadows are the dangers to which the observation points. A (dry) white preparation underneath the rich darks is by no means prohibited; indeed it existed in the white ground. On the same principle it might be used in a more or less solid preparation of the shadows, with a view to glazing, as was often the practice of the Italians. Again, not only white, but any light opaque colour, would be injurious, if mixed with the transparent darks, so as to exclude the light within or altogether sully their clearness. On the other hand, in light reflexions Rubens himself could not, and did not, dispense with white. The above precept is therefore to be understood as referring to a particular method, and is not without exceptions even in its application to that method.

In the Italian system, pictures ultimately wrought to the highest degree of warmth were sometimes begun in white and black.* Tintoret,

* Northcote gives the following extracts from some notes by Reynolds. "The Leda, in the Colonna Palace, by Correggio, is dead coloured white, and black or ultramarine in the shadows; and over that is scumbled, thinly and smooth, a warmer tint, I believe caput mortuum [colcothar of vitriol]. . . . The Adonis of Titian, in the Colonna Palace, is dead

being once asked which were the most beautiful colours, answered, "white and black." * By their means the gradation of light and dark in a picture can be, in a great degree, defined. The Flemish masters (including Rubens himself), as is evident from existing specimens, commonly used Cologne earth instead of, or in addition to, black in their chiaroscuro oil sketches ; and some of the Venetian masters employed a warmer brown. Even when confining themselves to such simple materials they were careful to preserve transparency as much as possible in the darks; for, whatever be the nature of the colour, internal light still exhibits its maximum of warmth.

It may here be remarked that those masters who, either from want of skill in drawing or from an impatience of restricting themselves to a fixed design, painted and repainted the shadows, were compelled to use the warmest colours, enriching them further with ultimate glazings, to represent the effect of transparency, and to avoid that leaden

coloured white . . . the shadows in the light parts of a faint purple hue. That purple seems to be occasioned by blackish shadows under, and the colour scumbled over them." Again : "Dead colour with white and black only; at the second sitting carnation. (To wit, the Barocci in the Palace Albani, and Correggio in the Pamphili.)" — *The Life of Sir Joshua Reynolds*, &c. vol. i. p. 36, 37.

* "Dimandato quali fossero i più belli colori, disse, il nero ed il bianco : perche l' uno dava forza alle figure profondando le ombre, l' altro il rilievo." — *Ridolfi, Le Meraviglie dell' Arte*, &c., 1648, vol. ii. p. 59.

hue which Rubens so justly condemned. The effect of powerful brightness behind colours, however neutral and even seemingly opaque in themselves, may be easily tried by holding up a not uniformly solid painting on cloth between the eye and the light. Wherever the ray penetrates, the dullest pigments are kindled to a flame; to imitate which with solid colours, the most glowing materials must of necessity be used. Reynolds, who scarcely ever left a light ground in the manner of Rubens, supplied its warmth, where he felt it to be desirable, with such colours.

The warm shadows observable in some of the works of Rubens might at first seem to be incompatible with "the negative nature of shade" so often recommended, and of which Correggio has been considered the chief representative. It will, however, be remembered that warmth on a very low scale can never be positive, and that its effect is more rapidly diminished by distance than the glow of brighter colours. The most daring examples of this system, in Rubens and in the Venetians, are to be found in works which required to be seen at a considerable distance*; and, when the Flemish master partially adopted this method in smaller

* "Songez aussi que les tableaux ou autres ouvrages en Peinture, qui sont vus d'une distance éloignée, doivent être plus colorés et rougeâtres dans les parties d'ombres et de lumière que ceux qui sont vus de près."— *Mansaert, Le Peintre amateur et curieux*, p. 282.

pictures, a more than ordinary freshness in the half tints restores the balance which the eye requires, giving the combined effect the utmost vivacity. The transparency of the deeper shades thus prevented the uniform blackness sometimes observable in otherwise fine works of the Italian schools; and as regards another quality in shadows, much and justly insisted on by the critics of the last century and among others by Reynolds*, viz. a uniformity of tone, a

——" simple unity of shade,
As all were from one single palette spread,"†

this attribute is secured by the process in question; a general, and more or less transparent, shade tint being left for the darks, varied in degrees of force rather than in hue.

To return to Descamps: speaking of the younger Teniers, he observes that the objections made to that painter's works (as to those of Rubens), on account of their being so thinly painted in certain parts, were, unfortunately, at one time listened to by the artist. He painted some of his pictures

* "For the sake of harmony, the colours, however distinguished in their light, should be nearly the same in their shadows."— *Reynolds, Notes to Du Fresnoy's Art of Painting,* note XLIII. Cochin (*Voyage d'Italie,* 1758, p. 199.) observes: "[L'artifice] consiste à faire toutes les ombres de son tableau, en quelque façon, du même ton de couleur. . . . Dans les ombres même des étoffes blanches, ce ton y entre assez pour les accorder avec le reste." Cochin was a scholar of Largilière.

† Mason's translation of Du Fresnoy's Art of Painting.

more thickly throughout; but they had neither the lightness nor the warmth of his earlier productions. Rubens, who had persevered in his method, induced Teniers to return to his original practice. "He advised him to load his lights as much as he pleased, but, in painting the shadows, never to omit to keep them transparent, so as to show the priming of the cloth or panel through them; for otherwise the colour of that priming would be of no consequence."* The biographer takes care to add in a note, that this ground, or priming, was always white, or approaching to it. Rubens, observes De Piles, always made use of white grounds. "I have seen pictures by the hand of this great man, executed at once [on such grounds], and which had a marvellous vivacity."†

One of the objects of the Van Eycks and their followers in keeping the colour thin, besides the

* "Rubens, à qui on avoit fait le même reproche, ramena Teniers à sa première manière. Il lui conseilla de charger les lumières autant qu'il le jugeroit à propos, mais de ne jamais manquer en peignant les ombres, de conserver les transparents de l'impression de la toile ou du panneau; autrement la couleur de cette impression seroit indifférente." — *La Vie des Peintres Flamands*, &c. tome ii. p. 160.

† "Une autre maxime . . . . c'étoit de se servir de fonds blancs, sur lesquels ils peignoient, et souvent même au premier coup, sans rien retoucher. . . . Rubens s'en servoit toujours; et j'ay vû des Tableaux de la main de ce grand homme faits au premier coup, qui avoient une vivacité merveilleuse." — *De Piles, Remarques sur l'Art de la Peinture* [*par Du Fresnoy*], ver. 382.

chief aim of showing the ground through the tints, seems to have been to preserve a surface which should harbour no dust, and which might be easily cleaned. It is not to be imagined that such a condition, if really proposed, could long fetter the hands of succeeding painters; yet it may be remarked that the works of Rubens, however freely executed, and often thickly painted in the lights, exhibit a surface which may be called smooth as compared with that of many other masters. Hoogstraten, who was accustomed to the practice of Rembrandt, may have had Rubens in his view, when he admitted that a picture with an even surface has the advantage of not being easily soiled. * Whether the Flemish master aimed at producing this appearance from an unconscious adherence to the traditional practice, or from a supposition that it would really contribute to the preservation of his works, it is needless to inquire; but it may be remarked that the method, described by Descamps, of slightly blending the colours of the preparation (which necessarily produced a certain smoothness, not materially altered by the final retouching), was habitual in the school. † That this evenness of surface was

* "Een wel deurwrochte en gladde Schildery heeft vooreerst die deugt, datze minst van stof en vuilnis beschaedicht wort." — *Inleyding*, &c. p. 241.

† Compare Houbraken's account of the method of Frank Hals (a scholar of Van Mander), *De Groote Schouburgh*, &c. vol. i. p. 92. In an earlier age, the works of Rijckaert Aertsz

by no means essential to the preservation of pictures is sufficiently evident from many a well preserved work by Rembrandt, executed certainly with no attention to such a condition. The latter practice of this great painter, so opposite to that of his early years, may perhaps be considered as the direct expression of his opinion on this point, at a time when the style of Rubens had degenerated in the hands of numerous imitators, who, as usual, copied the external characteristics only of their original.*

Hoogstraten, in another passage, expresses an opinion more consonant to the lessons which he had received from Rembrandt. He says: "It is above all desirable that you should accustom yourself to a lively mode of handling, so as to smartly express

ceased to please when, in consequence of the failing of his sight, he left his colours rough. See Van Mander, Het Schilder-Boeck, p. 247. verso.

* On the difference of Rembrandt's manner from that of the celebrated painters of his time, Houbraken makes the following observation. "The peculiarity of his execution (although in many respects not to be commended) leads me to suspect that he adopted it intentionally; for, if he had taken up a manner of painting like that of others, or if he had proposed to imitate any of the celebrated Italians or other great painters, the world would, by a comparison of his style with that of his models, have been enabled to define his [subordinate] merit; whereas now, by taking the contrary course, he has superseded all such tests. He has done that which Tacitus says Tiberius intended when he avoided all which could give occasion to the people to institute a comparison between him and Augustus, whose memory, he saw, was cherished by all."— *De Groote Schouburgh*, vol. i. p. 273. The allusion to Rubens is not to be mistaken.

the different planes or surfaces [of the object represented]; giving the drawing due emphasis, and the colouring, when it admits of it, a playful freedom, without ever proceeding to polishing or blending: for this annihilates feeling, supplying nothing in its stead but a sleepy constraint, through which the legitimate breaking of the colours is sacrificed. It is better to aim at softness with a well-nourished brush, and, as Jordaens used to express it, 'gaily lay on the colour,' caring little for the even surface produced by blending; for, paint as thickly as you please, smoothness will, by subsequent operations, creep in of itself." *

As the practice of Rubens was, not to blend the colour much with the tint that was next it, so the method of Rembrandt was, not to mix the superadded pigment with what was underneath it, except in final operations, when, to conceal the art, the brush was allowed here and there to plough deeply.

* "Dies is allermeest te prijzen, datmen zich tot een wakkere pinseelstreek gewoon maeke, die de plaetsen, die van andere iets verschillen, dapperlijk aenwijze, gevende de teykening zijn behoorlijke toedrukkingen, en de koloreeringen, daer 't lijden kan, een speelende zwaddering: zonder ooit tot lekken of verdrijven te komen; want dit verdrijft de deugt, en geeft niets anders als een droomige stijvicheit, tot verlies van d' oprechte breekinge der verwen. Beter is 't de zachticheyt met een vol pinseel te zoeken, en, gelijk het Jordaens plach te noemen, lustich toe te zabberen, weynich act gevende op de gladde in een smelting: dewijl de zelve, hoe stout gy ook zult toetasten, door 't veel doorschilderen wel van zelfs zal inkruipen." — *Inleyding,* &c. p. 233.

Mansaert remarks that "he [Rembrandt] rarely blended his colours, laying one on the other without mixing them."* Northcote records the following similar observation by Reynolds. "To preserve the colours fresh and clean in painting, it must be done by laying on more colour, and not by rubbing them in when they are once laid; and, if it can be done, they should be laid just in their proper places at first, and not any more be touched, because the freshness of the colours is tarnished and lost in mixing," &c.† The direction here given, it will be remembered, refers to solid painting, in which the effect of the colours is not calculated on the light ground underneath. The sharpness which is so remarkable in well preserved Venetian pictures of the best time is of a still different quality from that alluded to by Hoogstraten, and is altogether incompatible with the employment of a thick vehicle. Even the

* "Les tableaux de Rymbrant sont chargés de couleurs principalement aux belles lumières; il fondoit rarement ses teintes, les couchant les unes sur les autres sans les marier ensemble: façon de travailler particulière à ce grand maître." —*Le Peintre amateur et curieux, &c. par G. P. Mansaert, Peintre*, Bruxelles, 1763, 2nde partie, p. 142.

† The Life of Sir Joshua Reynolds, vol. i. p. 78. This observation, extracted from some notes in the handwriting of Sir Joshua, and supposed by Northcote to be original, is a translation from a passage in the annotations of De Piles on Du Fresnoy's poem. "Pour conserver les couleurs fraîches, il faut peindre en mettant toujours les couleurs et non pas en frottant après les avoir couchées sur la toile; et s'il se pouvoit," &c. — *Remarques sur l'Art de la Peinture*, ver. 382.

distinctness of Rembrandt's touch, produced by a rapidly drying varnish, has not the peculiar crispness of the Venetians.

Descamps, in alluding to the practice of Rubens, in the passage above quoted, speaks of "a tinted varnish." This expression, used by the critics of the painter, was not likely to be accidental; it is indeed literally applicable to the vehicle of the earlier masters, and the employment of such a medium by Rubens was almost a necessary consequence of his adopting the original method of showing the ground through the deep colours; for, in proportion as the pigment is thin, the vehicle requires to be substantial. But the durability which the oleo-resinous medium insured, and the possibility of dispensing with a final varnish by its means, appear to have recommended it to Rubens in the execution of his work generally. Its consistence was no doubt varied as required, as in Flemish pictures of the fifteenth and sixteenth centuries; and he was certainly not less careful than the early painters to use it in as colourless a state as possible for his brightest lights. In some of his works it is impossible to mistake the semi-resinous nature of the medium universally employed. Merimée detected the presence of varnish in the ridges of liquid colour with which the sketches of Rubens are outlined*, and Reynolds, whose peculiar prac-

* "A great number of sketches by this master are preserved, in which his process may be distinctly seen. The figures,

tice well qualified him to give an opinion on such matters, remarks that the picture of the Battle of the Amazons, formerly in the Dusseldorf Gallery and now at Munich, is "painted in varnish."* De Piles, a warm advocate of the style and methods of Rubens, recommends the use of varnish, in finishing at once, in order that the colours may "set" in working.†

The firmness of a semi-resinous medium recom-

drawn at first with black lead [probably before the size was added], are then retraced [on the oleo-resinous priming] with the hair pencil, and the effect of light and dark is produced by a brown colour thinly applied. The lines, formed by the pencil, are very delicate, yet at the same time full of colour. Their continuity proves that the pencil flowed freely on the surface of the panel. The ridges formed by the brush are not effaced, and the thick touches of transparent colours have remained where they were placed, notwithstanding their extremely liquid state."—*De la Peinture à l'Huile*, p. 19. Merimée is quite correct in concluding that the appearance in question indicates the presence of a resin; the brown outlines, if drawn with oil alone, would not have remained sharp. The correspondence of the process here described with Van Mander's account of the method of the earlier painters will not fail to be remarked.

* Journey to Flanders and Holland. Reynolds further observes: "This appears to be painted at the same time of his life that he painted the Fall of the Angels, which is in his best manner."

† "Si l'on veut faire un portrait au premier coup il faut . . . faire en sorte qu'il y ait peu d'huile dans les couleurs; et si l'on y vouloit mêler en peignant un peu de vernis avec la pointe du pinceau, cela donneroit un moyen facile de mettre couleurs sur couleurs, et de les mêler en peignant sans les emporter."—*Cours de Peinture*, p. 290.

mended it to painters who adopted a much more solid execution.* The glossy effect which it produced, and which rather fits it for works executed at once, may have been reduced by the admixture of a larger proportion of well rectified essential oil; or, in repainting, a wash of the latter (lightly applied for fear of disturbing the surface) would diminish this effect, and prepare the work for the ulterior operations. According to some notes which have been preserved relating to the ever-varying practice of Reynolds, it is evident that he did not object to the occasional use of varnish, even in the commencement of his pictures.† Rembrandt, who was likely to adopt the semi-resinous vehicle, not only from the traditional favour in which it was held in the Netherlands, but from its assisting the texture which he aimed at producing, was not always careful to use the medium in the most colourless state. A writer well acquainted with the methods of the Flemish and Dutch schools, speaking of a picture by this master which had acquired a russet tone, observes that, although this was partly the effect of time, it was also a con-

* "Jordaens had not begun to study painting under Rubens, and he was not accustomed, like that master, to prepare his pictures with thin washes; but the brilliancy and transparency of his colour are such, independently of all contrast, that it is not to be doubted that it contains varnish."— *Merimée, De la Peinture à l'Huile*, p. 22.

† See some extracts from the notes here referred to at the end of this chapter.

sequence of Rembrandt's habit of painting with varnish.* The essential-oil varnish commonly employed at the time, and which a scholar of Rembrandt has described, was chiefly composed of Venice turpentine, a material which, when not carefully purified, is very apt to grow yellow. But this ingredient is hardly sufficient to account for the uniform tawny colour sometimes observable in pictures by Rembrandt. The ordinary (red) sandarac oil varnish, the ancient "vernice liquida," was still commonly used in the seventeenth century by cabinet-makers, and was rendered very drying by means of spike oil, in addition to the ordinary ingredients.† The amber varnish had been adopted in its stead

* "Un jour que je montrois une fort belle pièce de cet auteur à un particulier, il me demanda s'il mêloit de la suie dans ses couleurs, puisqu'elles lui paroissoient si roussâtres. . . J'avoue que le vrai coloris étoit changé par la longueur du tems, d'autant plus que Rymbrant étoit accoutumé à peindre au vernis."—*Mansaert, Le Peintre Amateur*, &c., 2nde Partie, p. 142.

† "Vernix est le vernix commun qui se met en œuvre par les menuisiers et marqueteurs duquel se servent les peintres qui font des lambris et peignent les boutiques et boestes des apotiquaires, auquel pour le rendre plus tost siccatif ils adjoustent deux oz. d'aspic pour livre. Cela se seiche en fort peu d'heures et a fort beau lustre." De Mayerne explains that this "vernix" is sandarac dissolved in oil. The date of the memorandum is "24. Feb. 1634."

The celebrated Ruisdael was the son of a cabinet-maker at Amsterdam. The preservation of ancient methods and materials in the commoner handicrafts, after they have become obsolete in the arts which are subject to the taste or caprice of professors, has been already adverted to.

by the early Flemish painters, and, though often represented by copal, had never been entirely laid aside; it had even returned to the North from Italy, in the hands of Gentileschi. Rembrandt, from motives of economy, may have employed the scarcely less durable common "vernix," or sandarac oil varnish; and, for certain effects, may have reckoned on its tint. Either this, or the rapidly drying Venice amber before described, was, in all probability, used by him freely.

In the practice of oil painting, from the first, the darkness of the vehicle had been allowed to increase with the darkness of the colour employed; and, on the same principle, when, from whatever cause, such a medium has been used throughout the work, large masses of shadow and extreme force have been commonly resorted to, in order to give comparative freshness to the yellow lights. Painters who have not been careful to use a colourless vehicle are the most remarkable, and consistently so, for the depth of their effects and their scarcity of light. It is not necessary, in this instance, to inquire which circumstance influenced or led to the other; it is sufficient to remark that they are correlative. The influence of the colour of the vehicle on the quantity and depth of shadow is, indeed, plainly to be traced in the general style of oil painting, as compared with tempera and other methods.* It may be added, that the lighter

* Sandrart (*Teutsche Acad.* p. 336.) relates, it is to be hoped

treatment has rarely been successful without a modification of the vehicle itself. The low tone to which the lights subside, even when the most carefully prepared medium is employed, suggested to the first Flemish and Italian masters of the art — to the Van Eycks and Leonardo da Vinci — the necessity of that extreme force which is remarkable in their productions. To appreciate this merit in the Van Eycks, it is necessary to remember the pale character of the works executed immediately before their time, for example, the altar-pieces of Cologne and Dijon.

Some precautions adopted in all schools, to guard against or remedy the general defect here alluded to, remain to be considered. From the first introduction of oil painting, the yellowing of the vehicle was looked upon as its chief objection. Light within the colours, and force round them, were among the resources adopted by the Van Eycks to disguise this evil. The more direct expedients consisted in clarifying the oils to the last degree of purity; in rendering them drying, so as to present without delay a barrier to the action of air and moisture; and in fortifying them with resins, which had also the effect of checking the

on no good authority, that Rubens induced Jordaens to paint some works in tempera for tapestries, in the hope that his rival, by being accustomed to the light style of colouring suitable to tempera, might lose his characteristic force in oil; the biographer even adds that the scheme answered.

accumulation of the thinner ingredient on the surface. The suppression of the oil was found to be promoted by the addition of a certain proportion of a highly rectified essential oil; but this adjunct, if used at all in the earlier ages of the Flemish school, was not intended, as it afterwards was, to do away altogether with the gloss of the vehicle; for, had this been the case, the work would have required a varnish at last; and one of the recorded peculiarities of the early Flemish pictures was, that the surface bore out without varnish.

A superficial film, however thin, of the oleo-resinous vehicle, which invariably remained, thus superseded varnish; and to this surface the lighter and evaporable exudations of the oil would rise.* Leonardo da Vinci, as before shown, had noticed this effect; and the question with him, as with all oil painters, was, how this superficial yellowing was to be prevented or removed. In the subsequent Italian practice, when the whole picture was frequently laid in with an almost equal body of colour, which was to be again covered, it was allowable to cleanse the surface fearlessly; for example, by washing with alkaline detergents, and even by scraping and abrading the oily film.† But this was not

* "The drying of oils takes place partly from the evaporation of a portion of the fluid oil, partly from their combination with oxygen derived from the air." — *Dreme, Der Virniss- und Kittmacher*, p. 18.

† Fine sand, pulverised Flanders brick, or cuttle-fish, may

possible with finished works; a remedy was required which should remove the superficial discolouration without otherwise affecting the substance of the picture. The early painters could not long be in doubt as to the fittest expedient. They were familiar with the bleaching action of the sun on oils, and they knew from that experience that the same process, duly regulated, would remove the yellowness objected to, would harden the binding vehicle, and, by almost reducing the superficial film to its resinous ingredient only, would anticipate in some measure the enamel of time.* When the surface was thus freed from the evaporable portion of the oil, and was no longer in danger of undergoing change by exclusion from the light, the enclosure of the picture in its altar shrine undoubtedly tended to preserve the freshness of the colours.

The artists of the Netherlands, who at first

be used with good effect in this way, when it is not important to preserve the surface of the picture. Armenini (*I veri Precetti*, p. 126.) even recommends scraping with a knife; but this can only be advisable when the surface is not very rough.

* The same process, by accelerating the evaporation of aqueous particles and insuring the free action of air, tends to resinify the oil itself. "According to Thénard and Gay-Lussac (olive) oil consists of 77·21 parts of carbon, 9·43 of oxygen, and 13·36 of hydrogen: resin, of 75·94 parts of carbon, 13·34 of oxygen, and 10·72 of hydrogen. Hence, as the oil acquires oxygen and loses hydrogen it approaches the nature of a resin."— *Dreme, Der Virniss- und Kittmacher*, p. 19. note.

painted chiefly on wood, were not deterred by the story of Van Eyck's accident from placing their pictures in the sun. They continued the practice; not as originally, merely to dry the surface, but to bleach and remove the superficial oil. They even suffered occasionally from the use of this remedy, precisely as Van Eyck was said to have suffered. Van Mander relates that Peter Vlieric (his second master) having placed an unfinished picture on wood in the sun, the panel split, "so that it required to be again glued and planed."* The practice in question was familiar in Italy in Cennini's time, and was not likely to be discontinued after the introduction of oil painting, as there was then an additional reason for it. It is, therefore, by no means improbable that the Venetians, who took every possible means to prevent the rising and yellowing of the oil, and who needed not Cennini's caution† to be reminded of the danger of exposing panels to the sun, may have found in the necessity of the practice itself a new motive for painting on cloth.

The Venetian painters of the present day commonly place their pictures in the sun, not merely

* "Dese maeckte hy te Cortrijck, was een redelijck groot Penneel, t'welck ghedootverwet zijnde, is in de Son ghebor sten, dat het herlijmt en gheschaeft zijn most." — *Het Schilder-Boeck*, p. 251. verso.

† "La tavola l' ha molto per bene a non essere troppo sforzata dal sole." — *Trattato*, c. 155.

before varnishing, but at different stages of the work. In the expeditious days of the school, the rapid drying of the colours was often promoted by such means. Ridolfi states that Maffeo Verona was accustomed, in summer, to prepare a picture in the morning, and, after drying it in the sun, to finish it before night.* The fierce heat of the Italian sun limited the process in the warmer season to a very short interval, at least for finished pictures. A Genoese painter, writing to a friend in the month of July, requests that a newly painted picture on cloth may be exposed "for a quarter of an hour" † to the sun. The story of Titian placing his portrait of Paul III. in the sun, previously to its being varnished, is well known: the anecdote is preserved by Vasari only from the circumstance of the passers by mistaking the representation for the pope himself. ‡ It is not unlikely that Rembrandt may have placed the

* Le Meraviglie dell' Arte, vol. ii. p. 148.

† "Sarà bene che il quadro che ho fatto . . . . quando sarà messo sopra al suo telaro, lo facciate stare un quarto d' ora al sole. Genova, 6. Luglio, 1704." — *Lettere Pittoriche* (1822), vol. iv. p. 61.

‡ "Essendo [il ritratto di papa Paolo di Tiziano] messo a una finestra al sole alto per verniciare, tutti quelli che passavano, credendolo vivo, gli facevan di capo." — *Le Opere de Giorgio Vasari*, Firenze, 1832–1838, Parte 2nda, p. 1450. In the copy of the same letter of Vasari in the *Lettere Pittoriche*, it is stated that the picture was placed "in su un terrazzo:" the illusion produced would have been more possible supposing the figure to be seen at a window, as in the passage quoted.

portrait of his servant at his window merely to expose it to the light, but the story is recorded because of the illusion which the picture produced.*

The practice was, at all events, common in the Netherlands during the seventeenth century. De Mayerne, whose information was chiefly derived from painters of that school, observes, in a passage already noticed, that, when the picture is placed in the sun, linseed oil bleaches better than the other oils: the process was, therefore, customary in all cases. Adam, a Flemish painter frequently named by the physician, remarks that certain colours (massicot and indigo) are liable to change, if the picture is exposed to the sun.† Norgate, in the MS. before quoted, gives the following receipt. "To refresh oyl pictures, whose colours are faded" (the expression "faded" here meaning the alteration produced by a film of oil on the surface). — "Wash the picture clean with water, and set it in a hott sunshine to dry the space of three or four hours, soe the colours will be refreshed, and, if it be but a litle faded, it will recover it again." The next receipt begins, "If your picture be old," &c.;

* De Piles, Cours de Peinture, &c., Paris, 1708, p. 10. This writer states that he afterwards purchased the picture in question, "que je trouvai d'un beau pinceau et d'une grande force."

† "M. Adam, Peintre Flamand. — Le massicot et indico à huyle s'esvanouissent et se tirent dehors, si le tableau est exposé au soleil; ce sont couleurs dont il fault fort peu user." —*MS.* p. 123.

thus showing that, in the case referred to, he alludes to recently painted pictures.

The Spanish painters adopted the same method. Palomino, after speaking of the necessity of assisting the desiccation of most colours, observes: "This [drying] is promoted by the state of the weather in summer, and by the sun in winter; the pictures being placed where they can receive the solar rays. It is, indeed, always important that an oil picture should be exposed to the air and sun for a while, in order to remove the oily exudation, which deadens the colours, especially the blues and whites; and the more so if the picture has been for a time turned to the wall. Care must, however, be taken in regard to indigo, for the sun, if powerful, will cause it to fade."*

The habits of Rubens, in this respect, may be gathered from various letters of his, in which he alludes to the same practice. In one addressed to Sustermans, at Florence, to whom his "Allegory of War," now in the Pitti Palace, was consigned, he expresses his fears that the flesh tints and whites

* "Y para esto ayudan tambien mucho el tiempo, si es verano, y el sol, si es invierno, poniendo las pinturas donde le puedan gozar; y siempre es importante á una pintura á el olio que goce á el descubierto de los ayres y del sol algun tanto para que se le quite lo abutagado que suele mortificar los colores, especialmente en azules y blancos, y mas si ha estado algun tiempo vuelta á la pared; pero con cuidado si tiene añil, porque si es mucho el sol, se lo lleverá." — *El Museo Pictorico*, tomo 2ndo, p. 57.

may have become a little yellow in consequence of the picture having been packed up while it was fresh; and requests that, should such be the case, it may be exposed to the sun, at intervals, to remedy the defect.* In his letters to Sir Dudley Carleton, he repeatedly adverts to his having placed certain pictures, then freshly retouched, in the sun to dry. There is, however, no evidence that these, or any other of his works, were so exposed in order to be varnished: on the contrary, the pictures referred to were sent away, rolled, within a very few days after he had worked upon them. The circumstances under which they were completed tend further to show that the vehicle used, while it superseded the necessity of an ultimate varnish, must have dried hard in a very short time, to admit of their being packed in the mode described.†

* "Io temo che stando tanto tempo una pittura fresca incollata ed incassata, ben potrebbono smarrire un poco gli colori, e particolarmente le carnagioni e le bianche ingiallirsi qualche poco; che però, sendo V. S. si grand' uomo nella nostra professione, vi rimedierà facilmente con esporlo al sole, lasciandolo per intervalli; e quando fusse necessario, ben potra V. S. con mia permissione metterci la sua mano, e ritoccarlo dove sarà di bisogno, o per disgrazia, o per mia dappocaggine."—*Lettere Pittoriche* (1822), vol. iii. p. 528. The date of this letter is "12. Marzo, 1638."

† All the pictures, nine in number, were more or less retouched by Rubens in the month of May, 1618: two or three required considerable repainting. On the 26th of May he writes that for some time he had not given a single stroke of the brush, "alcuna pennellata," except on these pictures; and

Another letter from Rubens to Peiresc is no less important, as it contains the great painter's opinion, founded on his experience, of the remedy in question. He says: "If I knew that my portrait was still at Antwerp, I would cause it to be detained, and the case to be opened, in order to see if it is not spoiled after having been so long shut up without air; and whether, as commonly happens to fresh colours [under such circumstances], it has not turned yellow, so as to be no longer in appearance what it was at first. The remedy, however, if it should happen to be in so bad a state, will be to place it several times in the sun, as the sun can dissipate the superfluity of oil which causes this alteration. And, if at any time it should again become brown, it should again be exposed to the sun's rays, which are the only antidote for this disease of the heart." *

reckons on completing all by the 28th. By the end of the month the pictures were all packed in their cases, for on the 1st of June he writes: "I quadri tutti ben conditionati et incassiti con diligenza ho consigniati," &c. He speaks of them as freshly retouched, "frescamente rittochi;" always alluding to painting, and not to varnishing. See the letters in Carpenter's *Pictorial Notices*, &c. p. 153. 165. It is hardly to be conceived that, in entering into all these details, the application of varnish would have been omitted, if it had taken place: the inference is, that the vehicle which he used rendered such an addition unnecessary, being itself partly composed of varnish.

* "Se io sapessi che il mio ritratto fosse ancora in Anversa, io lo farei ritenere per aprir la cassa, e vedere se sendo stato rinchiuso tanto tempo in una cassa senza veder l'aria, non sia guasto e, siccome suole accadere agli colori freschi, ingialdito,

The recommendation in this letter, and in that to Sustermans, to place the picture in the sun "at intervals," and "several times," is not an unnecessary caution, even when the work is executed on cloth. Besides the danger, already adverted to, of some colours fading (especially if not defended by a firm vehicle), it is to be remarked that pigments thinly spread on a dry ground, in expanding with the heat, may become partially detached and rise in blisters. This is more likely to take place in pictures painted on panel, because the wood contracts (on the heated side), while the paint has a contrary tendency. Accidents of this kind are avoided by not exposing the picture to a fierce heat for any continuous length of time; in warm and dry weather it is safer to place it in the open air, without exposing it to the direct rays of the sun.*

The repetition of this process, as Rubens intimates, will at last entirely exhaust the exudations

di maniera che non parirà più quello che fu. Il remedio però, se arrivarà [d' essere] così mal trattato, sarà di metterlo più volte al sole, che sa macerare questa ridundanza del oglio che causa questa mutanza; e se per intervalli torna ad imbrunirsi, bisogna di novo esporlo ai raggi solari, che sono l' unico antidoto contro questo morbo cardiaco." — *Gachet, Lettres inédites de Pierre Paul Rubens*, 1840, p. 234.

* Sebastian Resta, speaking of some pictures which had darkened in tone, recommends that they should be placed for some days in the open air: "Gli tenga qualche giorno all' aria che si rischiariranno un poco più."—*Lettere Pittoriche* (1822), vol. ii. p. 114.

which cause the yellowing of the surface; and, when a picture is thus as safe as it can be from further change, the same cause which would injure it while in a fresh state, viz. its being screened from the action of light, will now be beneficial, and will tend to maintain the vivacity and force of the colours. The age of triptychs is past; the habit of reserving fine pictures for occasional inspection only is now almost obsolete; but their protection from the sun's rays, when there is no longer any "superfluity of oil" to dissipate, is essential to their preservation.*

Painters who are accustomed to a climate where the sun is not always to be had when wanted may find in the example of the Dutch and Flemish artists, who had no better sky than our own, a sufficient inducement to revive the practice above described. Rubens, as appears from one of his letters to Sir Dudley Carleton, required serene as well as sunny weather, because the wind "stirring up the dust is injurious to newly painted pictures." He had thus all the disadvantages to contend with which the painters of this country can experience.

The hints obtained by De Mayerne from Rubens and Vandyck relate to various subjects, and occur

* The celebrated Pietà, by Perugino, now in the Pitti Palace at Florence, suffered from long exposure to the sun while in its original situation in the Church of S. Chiara. See the notes to the Florence edition of Vasari (1832–1838), vol. i. p. 124.

in different parts of the physician's MS.; but, as it may be desirable to compare the remarks so recorded, they are here inserted together; with the exception of Vandyck's receipt for clarifying oil, which has been already given.

The physician, in noting some methods for preparing essential-oil varnishes, adds the following receipt, which, it will be seen, corresponds with that of Armenini, called the varnish of Correggio. "Another method, which is considered better. — Melt 1 oz. of very fine turpentine in 2 oz. of petroleum in a water-bath, taking care that nothing boils. This varnish never cracks, does not become white [opaque], and displays your work perfectly." * Immediately after, he inserts Rubens's opinion on this varnish.

"M. Rubens. N.B. Turpentine in time becomes arid (as the essential oil of turpentine or the petroleum evaporates), and is not proof against water. The best varnish, resisting water, is made with drying oil, much thickened in the sun on litharge, without boiling at all." †

* "Aultre façon qu'on tient meilleure. — R. Térébenthine très belle une oz., pétrole deux oz., fondus ensemble dans eau chaude, et guardez que rien ne bouille. Ce vernix ne s'escaille jamais, ne blanchit point, et vous monstre exactement tout vostre ouvrage." — *MS.* p. 7. verso.

† "La térébenthine avec le temps se seiche, l'huile de térébenthine ou le pétrole s'esvanouissant, et ne peut endurer l'eau. Le meilleur vernis résistant à l'eau se faict avec l'huile siccative fort espaissie au soleil sur la lytharge (voyez sur la céruse) sans aulcunement bouillir." — Ib. p. 8. The observation in

The first point which is clear from this memorandum is, that Rubens disapproved of essential-oil varnishes as final coatings for pictures. The varnish first described, as already shown, was held in great estimation by the Italians, and is frequently noticed in the physician's MS.; but, in more than one instance, he takes occasion to say, on the authority of various Flemish painters, that, without some admixture of oil, it is not durable in a humid climate. For example: "M. Portman, a Flemish painter, thinks that any varnish, whether composed of mastic, sandarac, or other resins, which cannot bear moisture without becoming white, and thereby being spoiled, will bear it without injury if you add to your varnish a little drying oil bleached in the sun, in the mode before explained. This oil should be thinned (so as to be easily spread) with spike oil, which presently evaporates; thus the drying oil will preserve all the rest."*

After describing one of the essential-oil varnishes of Van Belcamp, De Mayerne observes: "The addi-

the parenthesis is by De Mayerne. In the margin is written, "M. Rubens. N. B."

* "Vernix résistant à l'eau. — M. Portman, peintre Flamand, croit que tout vernix, soit de mastic, sandarach, ou aultres gommes resineuses, qui ne peuvent souffrir l'eaue sans blanchir et se gaster, la souffriront sans préjudice si à vostre vernix vous adjoustez un peu d'huyle grasse blanchie au soleil, ut a. s., laquelle soit délayée et rendue extensible avec huile d'aspic qui s'évapore facilement; ainsi l'huile seichant conservera tout le reste." — *MS.* p. 151.

tion of some very drying linseed or nut oil, in the proportion of half an oz. to a lb., will render this varnish, and any other which whitens or cracks in the air, very hard and firm."* Elsewhere, after noticing some similar compositions, he says: "To all these varnishes add a little nut or linseed oil bleached in the sun; this prevents their cracking, and causes them to resist moisture and air." † On the authority of Mytens, he gives the following direction: "To render it [the varnish] constant and unalterable by moisture, add to it, when it is prepared, an eighth part of drying linseed oil, bleached in the sun." ‡ A remedy for the chilling of ordinary varnishes is also suggested by Mytens. "Observe that a bloom appears on the surface of varnish as if one had breathed on it; this takes place especially in a damp situation. It is easily wiped away with a piece of linen; but it will not happen at all, if the picture, when varnished, is placed and left for some hours in the sun; or [and] if a second coat of the same varnish be applied." §

* "L'addition de ℥ ss sur lb. 1. d'huile de lin ou de noix fort siccative rendra ce vernix, et tout aultre qui se blanchit ou s'ecaille à l'air, très dur et resistant." — *MS.* p. 163.

† "A` tous ces vernis ajoustez un peu d'huile de noix ou de lin blanchie au soleil: cela empesche qu'ils ne se fendent et les faict resister à l'eau et à l'air." — Ib. p. 112.

‡ "Pour le rendre constant et inalterable à l'eau quand le vernix est faict adjoustez une huictiesme partie d'huyle de lin blanchie au soleil, siccative."

§ "(Mitens) Notez que sur le vernix, principalement en lieu

The sunned drying oil, of which Rubens speaks, may either have been an ingredient in an oleo-resinous varnish, or, being half-resinified, may have formed a varnish by itself. As it was "much thickened," it required, in either case, to be diluted; and it will be seen that (at least in painting) he employed an essential oil for this purpose.

Leonardo da Vinci alludes to a varnish consisting of nut oil alone, thickened in the sun (rassodato al sole) *; and a Flemish authority quoted by De Mayerne, after describing the usual essential-oil varnish, adds: "nut oil alone answers very well also." † If the opinion of Rubens above cited is to be taken literally, his authority may be added to those who recommended such a varnish: but this remains to be examined.

It is to be supposed that, whenever this method was adopted, the oil had the consistence and nature of a varnish; having been thickened and bleached by exposure to the sun, and having been rendered drying, either by the same means, or by the addition of metallic oxides. In some cases it was even allowed to attain its maximum of solidification, and was then dissolved by gentle heat with spirit of

ou à l'air humide, se faict un ternissement bleuastre, comme si on avoit soufflé dessus, qui s'essuye facilement avec un linge, mais qui ne viendra point si le tableau verny est mis et laissé pour quelques heures au soleil, ou si on donne une seconde couche du dit vernix." — *MS.* p. 149.

* Trattato della Pittura, Roma, 1817, p. 256.

† MS. p. 154. verso.

turpentine.* The addition of an essential oil would, indeed, be required in most cases, in order that the varnish might be easily spread, and in order to reduce its substance when applied on the picture. But it would evidently have been a misapplication of the method, to use thin unprepared oils. They have not sufficient body to protect the surface, and, as they become incorporated with the colours, have only the effect of yellowing without defending them. Van Gool relates that Robert Du Val, who was employed by William III. to take charge of the cartoons, and to repair other works at Hampton Court, had adopted the system here objected to. "He had," observes the biographer, "quite a mistaken notion on this subject, as I know from having often conversed with him; I found that instead of good varnish, he used nut oil to bring out the colours, maintaining that this was the best mode of keeping pictures in a good state. On this point I could never agree with him; for it is impossible to rub the oil so thinly and sparingly on the surface as to prevent it, before it is dry, from running down. Besides which, no oil is known which does not become yellow in time, thus spoiling the effect of the picture; it is, also, not to be removed without caustic materials, the application of which is extremely dangerous: whereas, when the ordinary

* See the description before given of a varnish of this kind, p. 357.

varnish has become yellow, it is easily removed by any one who understands the operation."*

Du Val appears to have used the nut oil in its thin unprepared state, thus rendering the method doubly objectionable. When thickened and bleached in the sun, and again diluted with a quickly evaporating essential oil, it would undoubtedly form a sufficient defence for pictures, and would, perhaps, be less likely to turn yellow, though this last defect, as Van Gool remarks, is hardly to be avoided. The addition of a small quantity only of bleached oil to the ordinary "Italian" varnish, in the mode recommended by De Mayerne and his Flemish authorities, would form a more brilliant and

* "Op order van Koning Willem den derden, monarch van Groot Brittanje, stak Du Val naer Engelant over, om . . . . het geen beschadigt of vuil was in order te brengen en schoon te laeten maken; hoewel hy van dit laetste een heel verkeert begrip had, daer ik wel meer als eens met hem over in gesprek ben geweest, en verstont van hem, dat hy, in plaets van goede Vernis, Nooten-Olie gebruikte om uit te halen; voorgevende, dat zulks het beste middel was om de Schildereyen in goeden staet te houden; het geen ik geenzints met hem eens was; want daer is niemand in staet, om 'er den Olie zo dor en schrael op te vryven, of, eer hy droog is, loopt 'er dezelve by neer; waer noch by komt, dat 'er geen Olie bekent is die niet geel wordt door den tyt, en de Schildereyen bederft; ook is 'er dezelve nooit af te krygen als met bytende middelen, het geen ten uiterste gevaerlyk is. Daer men in tegendeel Vernis, die geel geworden is, op een heele makkelyke manier, voor jemant die de behandeling weet, daer weder kan afdoen." — *De Nieuwe Schouburg der Nederlantsche Kunstschilders*, &c., in 'Sgravenhage, 1750, vol. i. p. 85.

scarcely less durable composition, and there can be little doubt that this was what Rubens meant. The expression "le meilleur vernis . . . . se faict *avec*," &c., bears this interpretation. But if he gave his opinion in favour of such a varnish, as compared with the more perishable applications in use, it still does not follow that he commonly employed it.

As already remarked, it may, at least, be inferred from the above passage, that he did not varnish his works with an essential-oil varnish; and if, as there seems ground to conclude, he used an oleo-resinous vehicle with his colours, his pictures, when first executed, could not require varnish at all. It is not likely that a painter who took such precautions to remove the yellowness occasioned by the rising of the oil, and who describes that effect as a "disease of the heart," would increase the evil he complained of by the addition of oil on the surface; nor could he consistently have explained such an effect in the words just cited, if the rising of the oil had been checked by a superadded varnish of any kind. Rubens appears to have considered that the essential-oil varnish, although answering very well in Italy, is not fit for a humid climate; and that the best substitute for such a composition is a vehicle which leaves a sufficient gloss on the colours, thereby superseding the necessity of any further addition. It may also have been his opinion, that those who consider a

varnish indispensable might employ, as such, this same medium diluted with an essential oil.

After all, the gloss on pictures executed with an oleo-resinous vehicle, though it may supersede varnish for many years, disappears at last, and requires to be supplied by other means. Specimens of pictures by the immediate followers of the Van Eycks are sometimes to be seen in their original state. They have now the dryness of tempera; the gloss, which at the time of their completion rendered varnish unnecessary, has entirely disappeared. Two portions of the triptych by Hugo van der Goes in S. Maria Nuova, at Florence, are* in this condition, and contrast strongly with the third (one of the wings) which has been recently varnished.

It remains to observe, in reference to the above opinion of Rubens, that he evidently did not object to a drying oil prepared with litharge, provided the oil was not boiled with that substance. The next memorandum is as follows:—

"M. Rubens. N.B. To make your colours spread easily, and consequently unite well, and even retain their freshness — as in the case of blues and indeed all colours—dip your brush lightly, from time to time while you paint, in clear essential oil of Venice turpentine, distilled in a water-bath; then, with the same brush, mix your colours on the

* April, 1846.

palette."* De Mayerne, in a marginal note, explains the oil of turpentine by the term "aqua di raggia" (the present Italian appellation of spirit of turpentine). The word "vidi" is also added, intimating that the physician had seen Rubens put his recommendation in practice.

The direction here given is a necessary consequence of using a somewhat thickened drying oil. If the oil itself be thinned with the spirit, the latter, when well rectified, evaporates so quickly, and so soon separates from the oil by rising above it, that the method proposed by Rubens is perhaps the least inconvenient. The same mode was adopted (probably to a greater extent) by Paul Veronese, as will be shown hereafter. Painters are aware that a considerable quantity of essential oil may be used with an oleo-resinous vehicle, without impairing its gloss. It has been shown that some Flemish painters, adopting the Italian practice, were in the habit of using so much spirit with certain colours, as purposely to render them dull; but it is evident that, had Rubens done this, he must have varnished his pictures at last, and this does not appear to

* "M. Rubens. N.B. Pour faire que vos couleurs s'estendent facilement, et par conséquent se meslent bien, et mesme ne meurent pas, comme pour les azurs, mais généralement en toutes couleurs, en peignant trempez légèrement de fois à aultre votre pinceau dans de l'huile blanche de térébenthine de Venise extraite au baing m., puis avec le dit pinceau meslez vos couleurs sur la palette." — *MS.* p. 10.

have been his ordinary practice. De Mayerne, in another part of his MS., writes:

"Sir Peter Paul Rubens said that all colours should be ready ground, employing for this purpose spirit of turpentine, which is better than spike oil, and not so strong."*

If colours are ground in an essential oil, it is to be supposed that the fluid has been perfectly rectified, otherwise the resinous portion would cause the colours to cake. Spirit of wine is, for this reason, generally preferred. Rubens had probably experienced the inconvenience of using colours ground in water, from the difficulty of drying them thoroughly; the mischief of aqueous particles in oils, varnishes, or pigments, has been already noticed. The expression "fiera," applied to spike oil, may have had reference to its pungent odour. The colours being perfectly ground, and kept in that state, could then be mixed with the drying vehicle for immediate use, according to the early Flemish practice. He proceeds:

* "Il Cavaliere Pietro Paulo Rubens. Il Signor Cavaliere Rubens a detto che bisogna che tutti i colori siano presto macinati operando con acqua di raggia che è migliore e non tanta fiera come l'oglio di spica."— *MS.* p. 151. The physician explains "acqua di raggia" as follows: "i. cum oleo extracto ex pice molli et alba quæ colligitur ex arbore picea, est boni odoris et distillatur in aqua instar olei albi Terebinthinæ." Rubens appears to have sometimes conversed, as he commonly wrote, in Italian; but not always in the purest and most intelligible language. The word "presto" is probably here used in the sense of the French "prêt."

"To use smalt so that it shall be beautiful and light, it is necessary to temper it quickly with varnish; then to lay it on gently, without caring to stir it much while the colour is wet, because this stirring spoils it: but when dry it may be worked upon as you please. The same mode may be adopted for blue bice. Ultramarine and ultramarine ashes are excellent for finishing the distance."*

The varnish here alluded to was no doubt the essential-oil varnish before mentioned, composed of fir resin and petroleum; the recommendation to mix the colour with it quickly (from its rapid drying) would hardly be applicable to an oil varnish. The ultramarine was evidently used in the second painting, perhaps over a preparation with the "cendre d'azur." The next remarks relate to Vandyck.

"Sir Anthony Vandyck, Knight, a very excellent painter. London, 30th December, 1632. N.B. Oil is the principal thing which painters should be choice in, endeavouring to have it good, colourless, fluid; for otherwise, if it be too thick, it alters all the finest colours, especially the blues and whatever is made with them, as the greens."

* "Per far la smalta bella e chiara bisogna temperarla con vernice tosto e metterla piano e non affaticarsi a mescolar troppo mentre il colore e umido, perchè questa agitatione guasta il colore. Ma essendo il lavoro secco si puo lavorare di sopra come vi piace.

"Così si puo far con la cenere—cendre d'azur. L'oltramarino e la cenere di oltramarino sono bellissime per finire la lontananza."—*MS.* p. 151.

"Linseed oil is the best of all the oils; it even surpasses nut oil, which is more fat, and that of the poppy seed, which becomes so and easily thickens."*

It is evident from these passages that the practice of Rubens and Vandyck differed in regard to the vehicle. Vandyck is, however, quite consistent: as he was accustomed to a thin and fluid medium, he objected, as will be seen, to the amber varnish. The firm vehicle which Rubens appears to have used, diluting it as required, was, for the same reason, not to his taste. On the other hand, the oleo-resinous medium, described as Vandyck's in a former chapter, and which, according to that account, he always preferred in a fresh state, before it had become inspissated, possessed the quality which he here approves. The physician continues:

"Having suggested to him that those colours — blue and green — when applied with gum water or isinglass in distemper, and then varnished, are as good as colours applied with oil, he told me that he very often laid in those colours in his pictures with gum water, and when they were

* "Sr Antony Van Deik chevalier, peintre très excellent. Londres 30. Xbris 1632. N.B. L'huyle est la principale chose que les peintres doivent rechercher, taschant de l'avoir bonne, blanche, liquide; car aultrement, si elle est trop grasse, elle tue toutes les plus belles couleurs, comme les azurs principalement et tout ce qui se faict avec iceulx, comme les verds.

"L'huyle de lin est la meilleure de toutes, mesme elle surpasse celle de noix, qui est plus grasse, et celle de semence de pavot, qui le devient et s'espaissit facilement." — *MS.* p. 154.

dry passed his varnish over them: but that the secret consists in making colours in distemper take and adhere to a priming in oil. This is accomplished certainly and permanently if the juice of onion or garlic be passed over the priming: the juice, when dry, receives and retains colours mixed with water.

"This conversation arose in consequence of his telling me that Signor Gentileschi, a Florentine painter of merit, has a very excellent green, prepared from an herb, which he makes use of in his oil pictures, possibly in the mode above described."* De Mayerne adds: "See above, among the observations on green colours, the preparation of bladder green with tartar; see also the notes on gamboge, a colour which does not fade."

In the process here recorded, which was common

* "Lui ayant proposé que les couleurs susdites, l'azur et le verd, estant couchées avec eau gommée ou colle de poisson à détrempe, puis vernissées, sont esquivalents à celles qui sont mises à huile, il m'a dit que bien souvent il couche en ses tableaux lesdites couleurs avec eau gommée, et puis, estant seiches, passe son vernix par dessus. Mais que le secret consiste à faire que les couleurs à détrempe prennent et s'attachent sur l'imprimeure qui est à huile. Ce qui se fera certainement et fidellement, si on passe par dessus l'imprimeure le suc d'oignon (ou d'ail) lequel estant sec reçoit et garde les couleurs à eau. Ce discours est venu sur ce qu'il m'a dit que S^r. Gentileschi, bon peintre Florentin, a un très excellent verd fait avec une herbe, duquel il se sert à ses tableaux à huile, possiblement de façon susdite. [Voyez ici devant entre les verds la préparation du verd de vessie avec le tartre et le Gambouya qui ne meurt point.]" — *MS.* p. 154.

with some Venetian painters, it was necessary to cover the portion painted in tempera with varnish, so as to render the colour proof against water. This precaution was sometimes imperfectly attended to, or the varnish may have decayed; the consequence has been (particularly in some Venetian examples), that such portions have been sometimes partly disturbed by washing. The varnish of Vandyck, fortunately recorded by Norgate, has been already given.

The use of the medium above described, as a mordant for gilding, is very ancient; it occurs in most of the early treatises, and, among others, in the Byzantine and Venetian MSS. before quoted.* It may have been employed at an early period in oil painting, in the mode recommended by Vandyck; it was afterwards used in the Northern schools, as a means of assisting the adherence of oil colours on any smooth surface. The editor of De Piles, after describing the preparation of an oil ground on copper, adds that the metal may be painted on at once, without any ground, if it be previously rubbed with the juice of garlic.† The authors of the *Encyclopédie Méthodique* even state that glass may be prepared for painting in the

* The glutinous mordants described in the latter are, gum arabic (rendered less liable to crack by the addition of honey or sugar), ox-gall, the milky juice of the fig tree, gum sagapenum, and the juice of garlic.

† E'lémens, &c. p. 138.

same way.* The adherence to an oil ground is complete, apparently in consequence of the presence of an essential oil in the juice. De Mayerne continues:

"Treatment of Yellow. He [Vandyck] makes use of orpiment, which is the finest yellow that is to be found; but it dries very slowly, and, when mixed with other colours, it destroys them. In order to make it dry, a little ground glass should be added to it. In making use of it, it should be applied by itself; the drapery (for which alone it is fit) having been prepared with other yellows. Upon these, when dry, the lights should be painted with orpiment: your work will then be in the highest degree beautiful.

"He spoke to me of an exquisite white, compared with which the finest white lead appears grey, which, he says, is known to M. Rubens.

"Also of a man who dissolved amber without carbonising it, so that the solution was pale, yellow, transparent †

The above communications from Vandyck are

* Beaux Arts, vol. ii., art. Impression, p. 661.

† "Labeur de Jaune. Il se sert de l'orpiment, qui est le plus beau jaune que l'on sçauroit avoir; mais il seiche fort tardivement, et meslé avec toutes autres couleurs il les tue. Pour la faire seicher il y fault adjouter un peu de verre broyé. Et pour s'en servir il le faut appliquer seul, ayant fait la draperie (pour laquelle seule il est très bon) avec autres couleurs jaunes, et sur icelles bien seiches fault rehausser sur le jour avec orpiment. Ainsi votre labeur sera beau par excellence.

"Il m'a parlé d'un blanc exquis au prix [auprès] duquel le

inserted towards the end of the physician's MS. The following extracts occur before it, but they have been here placed in the order of their dates.

"London, 20th May, 1633. The ground, or priming, for pictures is of great consequence. Sir Antonio Vandyck has made the experiment of priming with isinglass; but he told me that what is painted upon it cracks, and that this glue causes the colours to fade in a very few days. Thus it is good for nothing.

"Having given him some of my good [amber] varnish to work with the colours, by mixing it with them on the palette in the same mode as the varnish of Gentileschi is used, he told me that it thickened too much, and that the colours, in consequence, became less flowing. Having replied that the addition of a little spirit of turpentine, or other fluid which evaporates, would remedy this, he answered that it would not: but that remains to be tried. See whether the oil of white poppy, spike oil, or other will answer."*

blanc de plomb le plus beau semble gris, qu'il dit estre cogneu par M. Rubens.

"Item d'un homme qui dissolvoit l'ambre sans le brusler, de sorte que la dissolution estoit blanche, jaune, transparent." — *MS.* p. 155.

* "20. May, 1633, à Londres. L'imprimeure est de très grande conséquence. Sr. Antonio Van Deik a essayé d'imprimer avec la colle de poisson; mais il m'a dit que le labeur s'escaille, et que cette colle dans fort peu de jours tue les couleurs. Partant elle ne vaut rien.

"Lui ayant donné de mon bon vernix pour travailler avec les

De Mayerne had made the amber varnish too thick and too drying; the latter defect, instead of being corrected, would rather be increased by the addition of an essential oil. The proposed poppy oil was a fitter remedy. The author of the Byzantine MS. directs a thick vehicle to be diluted either with an essential oil, or with a raw (unprepared) fixed oil. The physician proceeds:

"He [Vandyck] has tried the white of Bismuth with oil, and says that the white prepared from lead — the material commonly used — provided it be well washed, is much whiter than that of Bismuth. The latter has not body enough, and is only good for the miniature-painter." *

"Mytens having tried the white of tin [or Bismuth] told me that it blackened on exposure to the sun, and that if mixed with white lead it spoils the latter. Thus it is good for nothing in oil, nor even in tempera if you expose it to the air: in a book it would do for illuminating." †

couleurs, les meslant sur la palette à la façon de celui de Gentileschi, il m'a dit qu'il s'espaissit trop, et que les couleurs se rendent par là moins coulantes. Lui ayant repliqué que d'y adjouster un peu d'huile de térébenthine, ou aultre qui s'evapore, cela peult servir pour remède, il m'a répondu que non. Cela gist à l'essai. Voyez si l'huile de pavot blanc, l'huile d'aspic ou aultre pourra servir." — *MS.* p. 10. verso.

* "Il a essayé le blanc de ♃ Bismuth à huile, et dit que celui de blanc de plomb, qui est l'ordinaire, pourvu qu'il soit bien lavé, est beaucoup plus blanc; que celui de ♃ n'a pas assez de corps, et ne vault rien que pour l'enlumineur." — *MS.* ib.

† "Mitens, ayant essayé le blanc de ♃, m'a dit qu'exposé au

It seems that tin (♃) and bismuth were not very clearly distinguished at the period when the physician wrote. The allusion to the washing of white lead shows that Vandyck, like other painters of his time, did not neglect this mode of improving the colour. The trial by exposure to the sun also exemplifies the habits before noticed.

The technical processes of the Flemish school long survived, not only in England but in France. De Piles and his immediate followers were the eulogists of Rubens. At a later period Descamps undertook to write the lives and record the practice of the painters of the Netherlands; while Largilière, Descamps's teacher, ceased not to exhort his countrymen to study the works of those masters to whom he was himself indebted for the skill or knowledge which he possessed. The principles of Largilière were embodied by his scholar, Oudry, in some valuable observations "On the manner of studying colour."* The homage paid by the French school to that of Flanders, during the seventeenth and first half of the eighteenth century, accounts for the resemblance which is often to be traced

soleil il se noircit, et si vous le meslez avec blanc de plomb il le gaste : partant il ne vault rien à l'huile, ny mesme à destrempe si vous l'exposez à l'air. En un livre il est bon pour enluminer." —*MS.* p. 10. verso.

* Réflexions sur la Manière d'étudier la Couleur, en comparant les Objets les uns aux autres. Printed originally in Watelet's Dictionnaire des Arts de Peinture, Sculture, &c., Paris, 1792, vol. i. p. 366.

between the directions contained in French manuals of those periods, and the methods which have now been brought to light from MSS. written during the lifetime of Rubens and Vandyck. The same may be said of the scattered records of art in this country; and, to whatever extent the English painters of the last age may have professed to imitate Italian examples, their technical habits still leaned to the traditions of the Flemish school.

EXTRACTS

FROM NOTES BY SIR JOSHUA REYNOLDS.

The notes which Sir Joshua Reynolds kept of the materials employed, and the order of the processes adopted by him, in the execution of many of his works, are important links in the technical history of painting. On a comparison of these interesting records with various circumstances that have been detailed in the foregoing pages, it will now appear that his experiments were not, as has been sometimes supposed, entirely novel. His methods often coincided with the Flemish practice, and were probably derived from its traditions. His use of wax was, however, an exception. The credit which that medium suddenly acquired in the latter part of the eighteenth century was the result of Caylus's attempts to restore the ancient encaustic painting. The original purpose failed, but the chief material which had been the object of experiment in the attempted revival, was adopted, with no very good results, by the oil painters, and especially by Reynolds.

Most of the notes from which the following specimens are extracted (and of which other copies exist) have already

appeared in print; they are not all equally interesting, and some, from the obscure form in which the memoranda were entered, are unintelligible. Sir Joshua may have adopted this mode to conceal his methods from his immediate attendants. It may be satisfactory to know that there can be no doubt of the authenticity of these records; the author is enabled to give his testimony on this point, having seen the original MSS. in the handwriting of Reynolds.

"Mr. Pelham, painted with lake and white and black and blue, varnished with gum mastic dissolved in oil with sal Saturni and rock alum. Yellow lake and Naples and black mixed with the varnish. July 7th, 1766."

This portrait was therefore laid in with white and black and blue, as Sir Joshua supposed Correggio's Leda, and some other pictures which he saw in Rome, were begun.* Lake was the only red admitted in this preparation, over which was passed a yellow varnish. The varnish itself, with the exception of the dryer (sugar of lead), corresponds with one described by Armenini.†

"Lord Villers, given to Dr. Barnard. Painted with vernice fatta di cera and Venice Turp. mischiato con gli colori macinati in olio. Carmine in vece di Lacca. Lady Wray, do."

The abbreviated form, "cera vern.," which sometimes occurs in these notes, is explained by this passage. It was a varnish consisting of wax dissolved in Venice turpentine: a portion of this was mixed with the colours previously ground in oil.

"Oct. 1767. Lord Townsend prima con mag^{p}., poi olio, poi mag^{p}. senza olio. Lacca, poi verniciato con vermilion."

This appears to mean that the colours, in the first and last sitting were mixed or ground with meguilp alone; but, as that composition consists of oil and mastic varnish, the expression "senza olio" is not literally correct. Lake was employed as the red in the first painting, and was varnished with vermilion.

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* Northcote's Life of Reynolds, vol. i. p. 36.

† I veri Precetti, &c. (1587), p. 129.

"The Speaker, the face colori in olio mischiato con magilp, poi verniciato."

Colours ground in oil were mixed with meguilp, then varnished.

"Solo magilp e poi tutto verniciato con colori in polvere senza olio e magilp."

The colours in the first paintings were ground in meguilp alone; the colours used with the (mastic) varnish may have been spread in a dry state, mingling with the varnish in the process of working: or, "colori in polvere" may only mean that the colours were not previously ground in oil.

"Master Buck, finito con ver. senza olio o cera, carmine.

(Mastic) varnish alone used with the colours in finishing.

"Duchess of Ancaster, prima magilp, seconda olio, terza olio."

The colours were mixed in the first sitting with meguilp only, in the second and third with oil.

"Lady Almeria Carpenter, Mrs. Cholmondeley, con magilp, terza olio."

The colours were mixed in the first two sittings with meguilp, in the third with oil.

"Mio proprio, given to Mrs. Burke, con cera finito quasi, poi con mastic var. finito interamente, poi cerata senza colori."

His own portrait, almost finished with wax, completed with mastic varnish, then covered with a wax varnish. This order of processes, the final wax varnish excepted, was well calculated to produce cracking. The wax must have been dissolved in spirit of turpentine and then mixed with colours ground in oil, as colours ground in the dissolved wax alone would have been unmanageable.

"Offe's picture painted with cera and cap. solo, cinabro."

Painted with wax and copaiba, vermilion for the red. The anonymous author of the *Traité de la Peinture au Pastel* (1788) suggests that copaiba should be generally used instead of, or slightly diluted with, oil. The use of this or some similar "balsam," with certain colours, by the painters of the Netherlands, has been already adverted to. Colours ground in

wax dissolved in a liquid resin would be scarcely manageable without some addition of oil, as an essential oil (with which they might be diluted) evaporates too rapidly.

"April 3. 1769. Per gli colori Cinabro e Lacca e ultramarine e nero, senza giallo. Prima in olio, ultima con vernice solo e giallo."

The colours first named (without yellow) were mixed with oil for the first sitting; yellow afterwards added with (mastic) varnish alone.

"May 17. 1769. On a grey ground. First sitting vermilion, lake, white, black Second, ditto. Third, ditto. ultramarine. Last, senza olio, yellow ochre, black, lake, vermilion, touched upon with white."

"Senza olio" is equivalent to "with varnish only."

"July 10. 1769. My own picture painted first with oil, aft. glazed without white, with capvi [copaiba], yellow ochre, and lake, no varn."

Part of this is struck through with the pen, and the memorandum continues: "painted with lake, yellow ochre, blue and black, capi. and cera vern."

From the correction it appears that the wax varnish before described was used together with copaiba.

"Dr. Johnson and Goldsmith, 1st olio, after capivi with colours but without white; the hand of Goldsmith capivi and white.

"Mrs. Horton, con capivi senza giallo, giallo quando era finito."

"Jan. 22. 1770. Sono stabilito in maniera di dipingere, primo e secondo o con olio o capivi, gli colori solo nero, ultram. e biacca, secondo medesimo, ultimo con giallo okero e lacca e nero e ultram. senza biacca, ritoccato con poca biacca e gli altri colori. My own given to Mrs. Burke."

This picture has been already mentioned; it was painted with a different vehicle, but the memorandum here appears to mean that the colours and order of the processes corresponded with those now described.

"Feb. 6. 1770. Primo olio biacca e nero, secondo olio biacca e lacca, terzo capivi lacca e giallo e nero senza biacca."

"May, 1770. My own picture, canvas unprimed, cera, finito con vernice."

"The Nysæan nymph with Bacchus principiato con cera sola, finito con cera e capivi, per causa it crak'd. Do. Dr. John. Offe fatto interamente con cap. e cera. Testa sopra un fondo preparato con olio e biacca."

When wax alone was used underneath, a more resinous medium being employed above, the surface was liable to crack. With this example "Offe's picture," already described, appears to be contrasted; that work having been painted with wax and copaiba from the first.

FROM ANOTHER MEMORANDUM-BOOK.

"Oct. 1779. Hope, cera solamente. La milior maniera con cera mischiata con Turp. di Venetia. Justicia, ma li panni cera sol."

Having before used the solution of wax in Venice turpentine (as appears from instances already quoted), his approval of it here may be considered the result of experience.

"Strawberry Girl, cera sol.

"Dr. Barnard, 1st black and white, 2. Verm. and white dry, 3. varnished and retouched."

"Oct. 2. 1772. Miss Kirkman. gum dr. et whiting, poi cerata, poi ovata, poi verniciata e retouched. Cracks."

A picture begun with whitening and gum tragacanth, then covered successively with wax, white of egg, and varnish, could hardly escape cracking and separating. Compare the anecdote quoted p. 221.

"Aug. 15. 1774. White, blue, asphaltum, verm. senza nero. Miss Foley, Sir R. Fletcher, Mr. Hare."

"Aug. 26. 1774. White, asphal. verm. minio principalm. e giallo di Napoli, ni nero ni turchino. Ragazzo con sorella, glaze con asphaltum e lacca.

"Sir R. Fletcher. Biacca, nero, ultramarine, verm. sed principalmente minio senza giallo. Ultima volta oiled out and

painted all over. Do. Mr. Hare, except glazed with varnish and giallo di Napoli finito quasi con asphaltum, minio e verm. poi con poco di ultramarine qua e là, senza giallo."

"Mr. Whiteford, Asphal. verm. minio principalmente senza giallo."

Another portrait, in the description of which some unintelligible contractions appear, was painted at first with "bruciata e non bruciata umbra e biacca, poco di olio."

Of another (or perhaps the same) he writes: "umbra, verm., biacca, thick, occasionally thinned with [spirit of] turpentine. Prima, nero, cinabro, minio e azurro, thick."

"Lord Henry and Lady Charlotte Spencer, first olio, e poi colori con cera senza olio. Mr. Weyland do. Miss N. do. Mrs. Mordaunt do. Mrs. Morris do. Tyrconnel do.

"My own, Florence, upon raw cloth, cera solamente."

"Mrs. Sheridan, the face in olio, poi cerato. Panni in olio poi con cera senza olio, poi olio e cera."

Even in this case "cera senza olio" cannot be supposed to mean that the colours were ground in dissolved wax only, but that wax was mixed with the colours previously ground in oil.

"My Lord Altorp minio e nero sol. poi giallo e verm. senza biacca, olio.

"Mrs. Montagu, olio poi cerata e ritoccata con biacca."

"Samuel, V. red [Venetian red?] glazed with gamboge and verm. Drapery gam. and lake, sky retouched with orp."

Another copy reads "retouched with turp." The gamboge and lake, quoted with other experiments in page 444., is extremely brilliant, having lasted perfectly well with Venice turpentine.

"St. Joseph, dipinto con verm. e nero velato con gamboge e lacca e asphaltum, poco di turchino nella barba. Panni, turchino e lacca."

"My own picture sent to Plympton, cera poi verniciato senza olio; colori, Cologne earth, vermilion. The cloth varnished first with copal varnish, white and blue, on a raw cloth."

The word "blue" is struck through with the pen.

"Miss Molesworth, drapery painted with oil colour first, after cera alone. Miss Ridge do. Lady Granby do.

"Præsepe [nativity] on a raw cloth senza olio. Venice turp. e cera."

"Aug. 1779. Hope, my own copy, first oil, then Venice T. [turpentine] cera, verm. white and black, poi varnished with Venice [turpentine] and cera. Light red and black thickly varnished."

"1781. Manner. Colours to be used Indian red, light red, blue and black, finished with varnish senza olio, poi ritocc. con giallo."

The few unquestionable defects in the practice thus exemplified may be enumerated as follows: —

1. Heterogeneous mixtures, as in the instance of Miss Kirkman's portrait.

2. The use of soft materials under others of a less dilatable nature; as in the instance of the picture of Bacchus and the Nymph; this is one of the ordinary causes of cracking. Merimée observes: "Cracks take place whenever the inner colours of the painting remain soft when the external layer is dry. Let drying oil, for example, be thickly spread on a canvass; it will be very soon dry on its surface. Let white lead be painted upon this; the colour will sink in, and will dry the sooner because a portion of the oil which it contained quits it to combine with the drying oil of the inner layer. In this state of things, if the atmosphere be warm enough for the materials to expand, the layer of white will crack."* The expansive tendency of the oil underneath is greater than that of the white. When these conditions are reversed, when the softer layer is uppermost, it will, if it contain much oil, become wrinkled or shriveled on the surface.

3. The use of colours of uncertain stability, such as lake (probably not of the best kind), yellow lake, and minium. The

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* De la Peinture à l'Huile, p. 102.

mention of orpiment (orp.) is doubtful, but Northcote, who gives some extracts similar to those above copied, quotes the following passage. "For painting the flesh, black, blue black, white, lake, carmine, orpiment, yellow ochre, ultramarine, and varnish. To lay the pallett; first lay carmine and white in different degrees; second, lay orpiment and white, ditto; third, lay blue black and white, ditto." * The date of this memorandum is early, Dec. 6. 1755. Carmine, orpiment, and blue black were at this time the representatives of red, yellow, and blue on Sir Joshua's palette. The immixture of orpiment with white, it is scarcely necessary to say, was sure to change. The directions of Cornelius Jansen and Vandyck point out the true mode of using this colour: its poisonous nature may, however, be added to other reasons for avoiding it. Another colour which Reynolds, in his latter practice, used too profusely, was asphaltum. When mixed with the colours, without due precautions in its preparation, it causes them to remain long soft, and is easily torn by drying varnishes.

With the above exceptions, not forgetting the use of wax (which, whether advisable or not, is unsanctioned by the example of the early masters), the practice of Reynolds, as exhibited in the above memoranda, is by no means dissimilar from that of the Flemish school. The use of liquid resins and varnishes with the colours, in addition to and even without oil, agrees with some methods occasionally adopted by Rubens and Rembrandt, as well as with the habits of the earliest oil painters. The object in this practice seems to have been to combine apparent substance with transparency, a characteristic which, as before observed, is especially attainable in oil painting as compared with other methods. The depth and richness of texture which Reynolds sought, and for which his finest works are remarkable, are qualities peculiar to the art in which he excelled. Although he never seems to have reckoned on the light priming of his canvass, as Rubens did, yet his system of painting at first in white and black, and with cool reds only, was equivalent to that process. Over this preparation his

* Life of Reynolds, vol. i. p. 78.

warmer, yellower colours, generally applied with varnishes only, had the richest effect: the picture in this state was sometimes retouched with tints mixed with white; but was finished quite as often, it seems, even in the lights, with the warmer colours alone.

The method of Reynolds, therefore, presents a judicious and generally successful union of the Italian and Flemish practice; inclining, on the whole, to the latter.

NOTE

ON THE MAYERNE MANUSCRIPT IN THE BRITISH MUSEUM.

(*Sloane MSS.*, No. 2052.)

Theodore de Mayerne, the author of the MS. in question, was born in 1573 at Geneva, where his father, Louis, had distinguished himself by various literary productions. Theodore selected the medical profession; and, after studying at Montpelier and at Paris, accompanied Henri Duc de Rohan to Germany and Italy. On his return he opened a school, in which he delivered lectures to students in surgery and medicine. This proceeding, and the innovation, as it then appears to have been, of employing mineral specifics in the healing art, excited a spirit of opposition which led to a public resolution, emanating from the faculty at Paris, in which his practice was condemned. His reputation rapidly increased from this period. He had before been appointed one of the physicians in ordinary to Henry IV.: in 1611, James I. invited him to England, and appointed him his first physician. De Mayerne enjoyed the same title under Charles I.: he died at Chelsea, leaving a large fortune, in 1655.

The name of Theodore de Mayerne appears with honour in the history of chemistry: Brande observes that the writings of

Paracelsus "are deficient in the acumen and knowledge displayed by .... his immediate successors, especially by Theodore de Mayerne and Du Chesne."* His knowledge of painting, and remarkable predilection for investigating its technical processes and materials, were of great service to the artists with whom he was in communication. Dallaway, in his annotations on Walpole, after noticing the influence of De Mayerne's medical practice on the modern pharmacopœia, remarks that "his application of chemistry to the composition of pigments, and which he liberally communicated to the painters who enjoyed the royal patronage, to Rubens, Vandyck, and Petitot, tended most essentially to the promotion of the art. From his experiments were discovered the principal colours to be used for enamelling, and the means of vitrifying them. Rubens painted his portrait; certainly one of the finest now extant. It originally ornamented the Arundel collection; was then at Dr. Mead's; Lord Besborough's; and is now [1826] at Cleveland House."†

A monarch who was so fond of painting as Charles I. was fortunate in having the assistance of a person who combined a love of art with a scientific knowledge applicable to its mechanical operations. It is not surprising that such an amateur as De Mayerne should enjoy the confidence of the first painters of his time; or that, in return for the useful hints which he was sometimes enabled to give them, they should freely open to him the results of their practical knowledge. Such communications, registered at the time by an intelligent observer, throw considerable light on the state of painting at one of its most brilliant periods, and tend especially to illustrate the habits of the Flemish and Dutch schools.

The manuscript in question is entitled "Pictoria, Sculptoria, Tinctoria, et quæ subalternarum Artium spectantia in Lingua Latina, Gallica, Italica, Germanica conscripta, a Petro

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* Manual of Chemistry, p. 23.

† Walpole's Anecdotes, edited by the Rev. James Dallaway, vol. ii. p. 302. note.

Paulo Rubens, Van Dyke, Somers, Greenberry, Jansen, &c. Fol. No. XIX. A. D. 1620. T. de Mayerne."

The signature is evidently that of De Mayerne. The same autograph occurs in the MS., p. 148.: "Artifice pour raviver tableaux à destrempe et les rendre equivalents à ceux qui sont à huyle. T. de Mayerne Invent. 1632." The signature and the passage which precedes it are, in this instance, written, currente calamo, by the same person; and from this specimen it appears that the greater part of the book is written by the physician himself. Communications consisting of autograph letters from various persons, and even short treatises, are also bound up with the work. In one or two letters the superscription is preserved: one in particular, from Joseph Petitot (brother it seems of the celebrated John Petitot), which is dated "de Genève ce 14 Janvier, 1644," is addressed, "A Monsieur Monsieur le Chevalier de Mayerne, Baron d'Aubonne, et Premier Medecin du Roi, et demeu^{t}. en St. Martin's Lane, à Londres." The barony of Aubonne descended to him from his ancestors. In a letter dated 1631, from another correspondent, he is styled "Monsieur de Maierne, Premier Medecin de leurs Majestés."

The identity of the compiler of this MS. with the celebrated physician and chemist of the same name is thus clearly established, as well as the fact that the greater part of the book is in his own handwriting. Various circumstances to which it refers corroborate its authenticity, and connect it with the age of Charles I. As the work will be published entire by Mr. Hendrie, its contents need not be further anticipated here.

ADDITIONS AND CORRECTIONS.

Page 4.

THE assumed identity of the sarcocolla of Pliny with gum tragacanth rests on the authority of Dr. John, Die Malerei der Alten, Berlin, 1836, p. 210.

Page 63. lines 2, 3.

For "The oldest and best copy known, that in the Ricciardi," read "The best copy known, that in the Riccardi."

Page 83.

Size under oil paint is not limited by Cennini to the surface of stone, but is directed to be applied in all cases. (*Trattato*, c. 94.) Earlier writers only recommend that the surface to be painted should be thoroughly dry.

Page 98.

Mabuse occasionally adopted the method, here described, of painting in water colours on cloth, as appears from the following passage in Van Mander. "There is also . . . at Amsterdam a large work representing the beheading of St. James, executed in chiaroscuro entirely without [body] colours, being tinted only; so that the whole cloth may be folded, pressed, and crushed without injury."

"Daer is oock . . . t' Amsterdam een groot stuck, wesende een onthoofdinge Jacobi, van wit en swart, ghedaen schier sonder verwe, als sapachtigh, datmen den heelen doeck mach vouwen, douwen, en kroken, sonder dat hem hinderen mach." — *Het Schilder-Boeck*, p. 225. verso.

Page 100.

Sandrart observes that the ordinary tempera was only fit for dry situations. The method of tinting linen, as opposed to solid tempera, was no doubt suggested by the effects of damp on body colours. Van Mander, speaking of some subjects in tempera on cloth, by Lucas van Leyden, observes: "It is to be lamented that these works are much injured by time, and in consequence of the damp of the walls — a great evil in these Netherlands."

". . . het is te jammeren datse ten tijdt en de oudtheyt so by den tanden hebben ghehabt en verdorven, door de vochticheyt der muren, daer in dese Nederlanden veel ghebrecks van is." — *Het Schilder-Boeck*, p. 214.

Page 111. Note.

The passage, "pro coopertura ymaginum regum depingenda," may perhaps be better explained by the following mandate of Henry III.: —

"Rex Thesaurario, &c., Liberate de thesauro nostro Willielmo de Sancto Paulo, XXVIII. d. ad emendam telam ad cooperiendum altare in capella nostra Sancti Stephani apud Westmonasterium. Teste Rege apud Westmon. XIX. die Maii." (21 Hen. III. 1237.)

Page 116.

The first number of the *Archæological Journal* (March, 1844) contains some receipts for colours, written early in the fourteenth century. The explanation of "cynople" there given only shows that there were inferior colours of the name, as well as the costly preparation described in the passage above referred to. The "gaudegrene" was probably prepared from weld (gaude).

Page 121.

The statutes of the Sienese painters (1355) might be compared with those of the English Painters' Guild, written more than half a century earlier (1283). The following passage is quoted by Sir Francis Palgrave, in his *Merchant and Friar*, page 9.: —

"Pourveu est, que nul ne mette fors (hormis) bonnes et fines couleurs sur or ou sur argent. C'est à savoir, bon azur, bon sinople, bon vert, bon vermillon, ou des autres bonnes couleurs destrempes d'huile, e nient de brasil, ne de inde de Baldas, ne de nul autre mauveise couleur."

The finer lake, which had received the name of sinople, is here clearly distinguished from brasil (from which it is prepared in one of the receipts printed in the *Archæological Journal*, above quoted). For the explanation of "Inde de Baldas," see p. 121. of the present work. It is to be observed that no mention of oil colours occurs in the Sienese document.

Page 171. Note.

A "Majesty," like that represented by Cimabue, is referred to in the following order dated the seventeenth of Henry III., before Cimabue was born: —

"Mandatum est custodi domorum Regis de Wudestok quod in rotunda capella Regis de Wudestok bonis coloribus depingi faciat Majestatem Domini et quatuor Evangelistas, et imaginem Sancti Edmundi ex una parte et imaginem Sancti Edwardi ex alia parte. Teste P. Winton. Episcopo apud Westmon. XXIIII. die Januarii (1233)." — *Liberate Rolls.*

Page 343. Note, line 11.

For "ivory black" read "bone black."

SCRIPTURAL AND HISTORICAL SUBJECTS

PAINTED IN ENGLAND

DURING THE REIGN OF HENRY III.

The following documents throw considerable light on the state of painting in this country during the first half of the thirteenth century; they are selected from a greater number, some of those already published having been omitted.* A few notices are included (as specimens of many similar directions) relating to sculpture and also to mere decoration. The taste for painting rooms in green, "viridi colore depingi et auro scintillari," has been already adverted to, as partly tending to explain the occasional use of the "white" instead of the "red" varnish.

"Rex custodi Manerii de Kenington salutem. Præcipimus tibi quod caminum cameræ nostræ de Kenington de novo fieri facias et ea quæ reparanda sunt in aliis domibus nostris ibidem reparari et capellam nostram de camera nostra depingi historiis ita quod campus sit de viridi colore estencelatus stellis aureis... Teste Rege apud Kenington, XVII. die Martii (1233)." — *Liberate Rolls.*

"Mandatum est Vicecomiti Oxon. quod picturas quæ restant faciendæ in magno talamo Regis apud Wudestok fieri facias, et depingi in magna capella imaginem Crucefixi et imagines Beatæ Mariæ et Beati Johannis. . . . Teste Rege apud Wudestok, XXIII. die Junii (1233)." — Ib.

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* See Gage Rokewode's Account of the Painted Chamber, Brayley and Britton's History of the Ancient Palace at Westminster, and Smith's Antiquities of Westminster.

"Rex Vicecomiti Suthampton. salutem. Præcipimus tibi quod . . . cameram Reginæ nostræ ibidem [Winton.] depingi et picturam in camera nostra ubi necesse fuerit renovari . . . et Majestatem quandam in capella Sancti Thomæ depingi. T. R. ap. Merleberg. XXVI. die Mart. (1238)." — *Liberate Rolls.*

"Mandatum est Vicecomiti Suthampton. quod . . . lambruschuram cameræ ibidem [Winton.] colorari viridi colore et stellari auro et circulos fieri in eadem lambruschura in quibus depingantur historiæ Veteris et Novi Testamenti. T. R. apud Wherewell XXVII. die Decemb. (1238)." — Ib.

"Henricus Dei gratia Rex Angliæ &c. Vicecomiti Southampton. salutem. Præcipimus tibi quod . . . fieri etiam facias quandam Mariolam cum quodam magno tabernaculo ad capellam prædictæ Reginæ nostræ et quandam tabulam depictam ante altare ejusdem capellæ. T. R. ap. Wudestok XIIII. die Novembris (1239)." — Ib.

"Rex Vicecomiti Kantiæ salutem. Præcipimus tibi quod parietes capellæ nostræ infra castrum Roffense de novo plastrari et dealbari et capellam ipsam intus depingi et Majestatem loco quo prius depicta fuit renovari. T. R. ap. Roff. x. die Febr. (1239)." — Ib.

"Rex custodibus operationis Turris Lond. salutem. Præcipimus vobis quod . . . fieri faciatis in eadem capella [S. Johannis Evangelistæ] tres fenestras vitreas unam scilicet ex parte Boreali cum quadam Mariola tenente puerum suum, reliquam in parte Australi de Trinitate, et tertiam de Sancto Johanne Apostolo et Evangelista in eadem parte Australi . . . et depingi duas imagines pulchras ubi melius et decentius fieri possint in eadem capella, unam de Sancto Edwardo tenentem anulum et donantem et tendentem Sancto Johanni Evangelistæ. . . T. R. ap. Windlesoram, x. die Decemb. (1241)." — Ib.

"Rex custodibus operationis Turris Lond. salutem. Præcipimus vobis quod . . . et Mariolam cum suo tabernaculo et imagines beatorum Petri, Nicholai, et Katarinæ et trabem ultra altare beati Petri et parvum patibulum cum suis imaginibus de novo colari [sic] et bonis coloribus refriscari; et fieri faciatis quandam imaginem de beata Virgine ultra altare beati Petri versus Austrum, et alteram imaginem de beato Petro in solemni apparatu Archiepiscopali in parte Boreali ultra dictum

altare, et de optimis coloribus depingi, et quandam imaginem de Sancto Christoforo tenentem et portantem Ihesum ubi melius et decentius fieri potest et depingi in prædicta ecclesia. Et fieri faciatis duas tabulas pulchras et de optimis coloribus et de historiis beatorum Nicholai et Katerinæ depingi ante altaria dictorum sanctorum in eadem ecclesia et duos Scherumbinos stantes a dextris et sinistris magni patibuli pulchros fieri faciatis in prædicta ecclesia cum hilari vultu et jocoso. Teste ut supra (1241)." — *Liberate Rolls.*

"Mandatum est Ballivis Wudestok. quod . . . in capella Regis [apud Wudestok.] super tabulam altaris imagines Crucefixi, Beatæ Mariæ, Sancti Johannis Evangelistæ et duorum angelorum in modum Cherubim et Seraphim confectorum fieri . . . faciant. T. R. ap. Wudestok. XIX. die Febr. (1244)." — Ib.

"Mandatum est Vicecomiti Suthampton. quod . . . Majestatem et imagines circa ipsum [in capella Sancti Thomæ, Winton.] fieri et deaurari faciat, et ultra hostium illius cameræ [Reginæ] quandam civitatem depingi. T. R. ap. Lutegareshull. III. die Mart. (1246)." — Ib.

"Mandatum est R. de Mucegros custodi manerii de Lutegareshull. quod . . . depingi etiam [faciat] postes ejusdem [aleæ] colore marmoreo et historiam de Divite et Lazaro in gabulo ex opposito deisii. T. R. ap. Westmon. XVII. die Mart. (1246)." — Ib.

"Mandatum est eidem [Vicecomiti Kantiæ] quod fieri faciat in ecclesia Castri Dovoriæ tria altaria, unum in honore Sancti Edmundi, et aliud in honore Sancti Adriani et tertium Sancti Edwardi et tres imagines prædictorum trium Sanctorum et unam de Sancto Johanne Evangelista. T. R. ap. Wingeham. XV. die Mart. (1247)." — Ib.

"Rex Vicecomiti Suthampton. salutem. Præcipimus tibi quod fieri facias unam trabem in capella Reginæ nostræ in castro nostro Winton. et desuper unam crucem cum Maria et Johanne superpositis. T. R. ap. Clarendon. XVIII. die Decemb. (1248)." — Ib.

"Rex Vicecomiti Suthampton. salutem. Præcipimus tibi quod . . . . in eadem capella [Winton.] depingi [facias] imaginem Beatæ Mariæ ultra altare et versus Austrum in eadem

capella imaginem Dei et Matris suæ. T. R. ap. Winton. XXVIII. die Decemb. (1248)." — *Liberate Rolls.*

"Rex Vicecomiti Suthampton. salutem. Præcipimus tibi quod . . . depingi facias in capella dilectæ Reginæ nostræ apud Winton. super gabulum versus Occidentem imaginem Sancti Christofori qui, sicut alibi depingitur, in ulnis suis deferat Christum, et imaginem Beati Edwardi Regis qualiter anulum suum cuidam peregrino [donet] cujus imago similiter depingatur. T. R. ap. Windlesor. II. die Maii (1248)." — Ib.

"Rex Ballivo suo de Wodestok. salutem. Præcipimus tibi quod . . . imagines Crucefixi et Beatæ Mariæ et Beati Johannis Evangelistæ in tabulis et muris juxta sedem nostram in superiori capella depingi facias. T. R. ap. Wodestok. XX. die Junii (1250)." — Ib.

"Rex Constabulario suo de Merleberg. salutem. Præcipimus tibi quod in castro nostro de Merleberg. fieri facias . . . in capella Reginæ nostræ ibidem unum Crucefixum cum Maria et Johanne et unam Mariam cum puero . . . Et in castro nostro de Lutegarshul. . . . unum Crucefixum cum Maria et Johanne et imaginem Beatæ Mariæ cum puero in capella nostra. T. R. ap. Winton. VIII. die Julii (1250)." — Ib.

"Rex Godefrido de Lyston. salutem. Præcipimus tibi quod in aula castri nostri de Windesora . . . . fieri facias regalem sedem in qua depingi facias imaginem Regis sceptrum in manu tenentis provisurus quod sedes illa pictura aurea decenter ornetur. T. R. ap. Clarendon XIX. die Julii (1250)."— Ib.

"Rex Vicecomiti Wiltes. salutem. Præcipimus tibi quod in capella nostra Omnium Sanctorum in manerio nostro de Clarendon. fieri facias . . . . unum Crucefixum cum duabus imaginibus ex utraque parte de ligno et imaginem Beatæ Mariæ cum puero. . . . In camera Fratrum minorum fiant imagines Sanctæ Trinitatis et Beatæ Mariæ. T. R. ap. Gillingham. XXX. die Julii (1250)." — Ib.

"Rex Vicecomiti Wiltes. salutem. Præcipimus tibi quod in camera Reginæ nostræ unam fenestram vitream et in eadem fenestra unam Mariolam cum puero et unam Reginam ad pedes ipsius Mariolæ junctis manibus tenentem in manu sua Ave Maria fieri facias. T. R. ap. Clarendon. VII. die Decemb. (1251)." — Ib.

"Rex Vicecomiti Suthampton. salutem. Præcipimus tibi quod novam capellam nostram in castro nostro Winton. de historia Josep depingi et . . . tabulam juxta lectum nostrum de imaginibus custodum lecti Salomonis depingi facias. T. R. ap. Winton. xx. die Decemb. (1251)." — *Liberate Rolls.*

"Rex Johanni de Haneberg. salutem. Præcipimus tibi quod . . . picturam beatæ Mariæ Virginis [in capella Reginæ apud Wodestok.] melius depingi facias. T. R. ap. Wodestok. III. die Feb. (1251)." — Ib.

"Henricus Dei Gratia Rex Angliæ &c. Vicecomiti Essex. salutem. Præcipimus tibi quod . . . imaginem ejusdem Beati Edwardi ex parte orientali inferioris partis ostii [in capella S. Johannis Evan. in cimeterio de Clavering] cum anulo porrigendo imagini Beati Johannis Evangelistæ ex parte superiore ostii ejusdem capellæ depingi facias. T. R. ap. Waleden. XII. die Mart. (1251)." — Ib.

"Rex Vicecomiti Suthampton. salutem. Præcipimus tibi quod . . . pingi facias cameram Rosamundæ in eodem castro [Winton.] historiam Antiochæ. T. R. ap. Wherewell. VI. die Junii (1251)." — Ib.

"Rex Vicecomiti Wiltes. salutem. Præcipimus tibi quod . . . in eadem camera [Clarendon.] historiam Antiochæ et duellum Regis Ricardi depingi et lambruscariam illam depingi viridi colore cum scintillis aureis . . Imagines autem Beatæ Mariæ, Beati Edwardi et Cherubin fieri facias et poni in capella nostra. T. R. ap. Merleberg. II. die Julii (1251)." — Ib.

"Rex Ballivo suo de Havering. salutem. Præcipimus tibi quod apud Havering. . . . in capella ejusdem Reginæ unam Mariolam cum puero fieri et Annunciationem Beatæ Mariæ in eadem depingi . . . et in camera dictæ Reginæ quatuor Evangelistas depingi cum aliis picturis in eadem . . . facias. T. R. ap. Wantham. XXVI. die Augusti (1251)." — Ib.

"Rex Vicecomiti Surr. et Sussex. salutem. Præcipimus tibi quod apud Guldeford. . . . in capella Beatæ Katherinæ ejusdem imaginem et ejusdem historiam ultra altare absque auro et azuro honeste depingi . . facias. T. R. ap. Windesor. xx. die Septemb. (1251)." — Ib.

"Rex Vicecomiti Notingham. salutem. Præcipimus tibi quod . . . . ante altare in capella nostra [apud Noting.] quan-

dam tabulam de historia Sancti Willielmi et super idem altare aliam tabulam de historia Sancti Edwardi depingi facias . . . et in capella Sanctæ Katerinæ ante altare unam tabulam et super altare aliam cum historia ejusdem virginis et in gabulo ejusdem capellæ tremendum judicium depingi. T. R. ap. Notingham. XII. die Decemb. (1252)."—*Liberate Rolls.*

"Rex Vicecomiti Notingham. salutem. Præcipimus tibi quod . . . in fronte albæ capellæ ejusdem castri [Notingh.] depingi [facias] imaginem Sancti Edwardi ex una parte et ex alia parte imaginem Beati Johannis Evangelistæ et in medio imaginem Beatæ Virginis cum puero. . . . T. R. ap. Notingham. XIII. die Januarii (1252)."—Ib.

"Rex Vicecomiti Notingham. salutem. Præcipimus tibi quod in camera Reginæ nostræ apud Notingham. depingi facias historiam Alexandri circumquaque. T. R. ap. Noting. XV. die Januar. (1252)."—Ib.

"Rex Vicecomiti Notingham. salutem. Præcipimus tibi quod . . . quandam magnam verinam extra ostium ejusdem cameræ cum imagine Sancti Martini pallium pauperi extendentis fieri facias. T. ut supra.

"Rex Vicecomiti Northampton. salutem. Præcipimus tibi quod . . . in castro nostro Northampton. . . . fieri facias fenestras de albo vitro et in eisdem historiam Lazari et Divitis depingi. T. R. ap. Noting. XV. die Januar. (1252)."—Ib.

"Rex Johanni de Henneberg. et Petro de Leg. custodibus operationum suarum de Wodestok. salutem. Præcipimus vobis quod apud Wodestok. . . . una verinam cum imagine Beatæ Mariæ in nova capella et imaginem Angelicam ultra sacrarium ejusdem capellæ et . . . veterem capellam historia de muliere adulterio condempnata et qualiter Dominus scripsit in terra, et qualiter Dominus dedit Alapham Sancto Paulo et aliquid de Sancto Paulo depingi, et in superiore parte ejusdem capellæ historiam Evangelistarum similiter depingi faciatis. T. R. ap. Wodestok. IIII. die Febr. (1252)."—Ib.

"Rex Vicecomiti Suthampton. salutem. Præcipimus tibi quod . . . fieri facias duas tabulas ad duo altaria et duo superaltaria ponenda in capella nostra Sancti Thomæ et capella nostra juxta lectum nostrum in Castro [Winton.] et in eadem capella fieri facias unam Crucem cum Maria et Johanne et aliam Mariam

cum filio suo. T. R. ap. Winton. XXVII. die Junii (1252)."—*Liberate Rolls.*

"Rex Johanni de Hanneberg. et Petro de Legh. custodibus manerii sui de Wudestock. salutem. Præcipimus vobis quod . . . duas tabulas depictas cum imaginibus duorum Episcoporum in magna capella nostra ibidem poni et unam tabulam depictam cum imagine Beatæ Mariæ in capella Beati Edwardi . . faciatis. T. R. ap. Wudestok. XIX. die August. (1252)."—Ib.

"Rex Odæ Wymer Ballivo suo de Gillingham. salutem. Præcipimus tibi quod . . . in fenestris vitreis depingi [facias] tres imagines videlicet Beatæ Mariæ Beati Edwardi Regis et Confessoris et Beati Eustachii . . &c. T. R. ap. Gillingham. X. die Decemb. (1253)."—Ib.

"Rex Vicecomiti Suthampton. salutem. Præcipimus tibi quod in fronte capellæ Sancti Thomæ in castro nostro Winton. imaginem Beatæ Mariæ cum puero suo fieri; warderobam Reginæ nostræ viridi pictura et stellis aureis depingi et quendam angelum ex altera parte prædictæ capellæ fieri et imagines Prophetarum in circuitu ejusdem capellæ depingi et in fenestra vitrea in eadem capella imaginem Beati Edwardi cum anulo fieri . . . facias. T. R. ap. Winton. XXVIII. die Decemb. (1253)."—Ib.

"Rex Vicecomiti Northampton. salutem. Præcipimus tibi quod . . . quandam fenestram vitream in aula nostra Northampton. cum imaginibus Lazari et Divitis in ea depictis ex opposito desci nostri . . facias. T. R. ap. Merton. VIII. die Januar. (1253)."—Ib.

"Rex Ballivo suo de Havering. salutem. Præcipimus tibi quod superiorem capellam nostram de Havering. lambruscari et quandam imaginem Beatæ Mariæ Virginis in inferiori capella et duas fenestras vitreas cum scutis Provinciæ . . . facias. T. R. ap. Havering. VIII. die Aprilis (1253)."—Ib.

"Rex Vicecomiti Sussex. salutem. Præcipimus tibi quod . . . habere facias Ricardo Constabulario et Elyæ Maunsell. custodibus operationum nostrarum de Guldeford. centum libras ad . . . . ad depingendum in aula nostra ibidem ex opposito sedis nostræ historiam de Divite et Lazaro . . &c. T. R. ap. Guldeford. III. die Januar. (1256)."—Ib.

"Rex Vicecomiti Suthampton. salutem. Præcipimus tibi quod

. . . in capella Sancti Thomæ [in castro Winton.] unam fenestram vitream cum imagine de Majestate et sub Majestate imaginem Sancti Edwardi tenentem in manibus quendam Regem Majestati oblatum, et imaginem Sancti Georgii super parietem in introitu aulæ . . . facias. T. R. ap. Winton. xxx. die Junii (1256)."—*Liberate Rolls.*

"Rex Vicecomiti Surr. salutem. Præcipimus tibi quod . . . imaginem Sancti Edwardi et imaginem Sancti Johannis tenentem anulum in sua manu ibidem depingi et easdem imagines super murum juxta sedem nostram in capella nostra de Guldeford. similiter depingi facias, et quandam imaginem Beatæ Mariæ fieri facias et poni in capella Reginæ nostræ ibidem. T. R. ap. Turrim Lond. xiii. die Februar. (1261)."—Ib.

"Rex dilecto et fideli suo Roberto de Sancto Johanne Constabulario Castri sui Winton. salutem. Mandamus vobis quod . . . quandam fenestram albam de vitro fieri et Nativitatem Beatæ Mariæ in ea depingi faciatis. T. R. ap. Westmon. xi. die Februar. (1266)."— Ib.

"Rex Vicecomiti Wiltes. salutem. Præcipimus tibi quod . . . quatuor Evangelistas in fenestris vitreis aulæ nostræ [apud Clarendon] fieri facias. T. R. ap. Clarendon. xvii. die Decem. (1268)."—Ib.

"Rex Vicecomiti Suthampton. salutem. Præcipimus tibi quod . . . [apud Winton.] unam imaginem Beati Edwardi incidi et depingi . . . et picturas frontellorum coram altaribus in capella nostra et omnes alias picturas domorum nostrarum et capellarum ibidem innovari . . . facias. T. R. ap. Westmon. xxvi. die Julii (1268.)" — Ib.

The mandates that follow are extracted from the Close Rolls.

"Mandatum est W. Karliolensi Episcopo quod capellas Regis Sancti Stephani et Sancti Johannis Westmonasterii celare faciat ultra altaria et quatuor tabulas fieri, videlicet duas ponendas ante eadem altaria et duas strictiores ponendas super eadem altaria, in quibus tabulis depingi faciat quod melius et competentius viderit depingendum, dum tamen in tabulis strictioribus depingantur sanctorum Stephani et Johannis [imagines] . . . ita quod pro posse suo ea parata inveniat Rex in adventu

suo London. T. R. ap. Otteford. IIII. die Decemb. (16 Hen. III. 1232)." — *Close Rolls.*

" Mandatum est R. Passelewe quod fieri faciat vel emi si prompte inveniantur duas imagines pulchras et bene depictas, unam ad similitudinem Beati Johannis Evangelistæ et aliam ad similitudinem Beati Stephani Martyris quales conveniunt prædictorum Sanctorum figuris ; ita quod Rex imagines prædictas promptas et decenter provisas inveniat in capellis suis Westmonasterii in primo adventu suo London, et quod inde possit commendari (1233)." — Ib.

" Mandatum est H. de Patheshull . . . quod . . . borduram a tergo sedis regis in capella Sancti Stephani apud Westmonasterium et borduram a tergo sedis Reginæ ex alia parte ejusdem capellæ interius et exterius depingi faciat de viridi colore juxta sedem ipsius Reginæ depingi faciat qnandam Crucem cum Maria et Johanne ex opposito Crucis Regis quæ juxta sedem Regis depicta est. T. R. ap. Winton. VII. die Febr. (1236)." — Ib.

" Mandatum est H. de Pateshull. Thesaurario quod . . . in capella Sancti Stephani apud Westmonasterium . . . a tergo ultra sedem Regis faciat depingi historiam Joseph. T. R. ap. Westmon. x. die Februarii (1238)." — Ib.

" Mandatum est custodibus operationum de Windlesora quod in capella Regis depingi faciant vetus testamentum et novum. T. R. ap. Burdegal. x. die April. (1243)." — Ib.

" Mandatum est Edwardo filio Odonis quod in exteriori parte sedis Regis in capella Sancti Stephani Westmonasterii . . . bene depingi faciat pulchram et decentem imaginem Sanctæ Mariæ et ex alia parte cancelli versus ostium gardini imagines Regis et Reginæ ita quod paratæ sint et bene depictæ in proximo adventu Regis ibidem. T. R. ap. Clarendon. VIII. die Febr. (1245)." — Ib.

" Mandatum est Edwardo de Westmonasterio quod in capella Beati Stephani depingi faciat imagines apostolorum in circuitu ejusdem capellæ et judicium in occidentali parte ejusdem et iconiam Beatæ Mariæ Virginis in quadam tabula similiter pingi faciat, ita quod parata sint in adventu Regis. T. R. ap. Brugeswater. XIII. die August. (1250)." — Ib.

" Mandatum est Edwardo de Westmonasterio . . . quod . . .

magnam etiam Crucem collocari faciat in navi ecclesiæ Westmonasterii et emat duos angelos in modum Cherubym ex utraque parte illius crucis collocandos. T. R. ap. Wodestok. IIII. die Febr. (1251)." — *Close Rolls.*

" Mandatum est Edwardo de Westmonasterio quod in novo opere fabricæ feretri Beati Edwardi apud Westmonasterium fieri faciat unam capellam ubi commodius fieri possit . . . et depingatur in eadem capella historia Sancti Edwardi et bassam cameram lambruscari faciat in qua depingatur historia Sancti Eustachii et in fenestra gabali historia Salomonis et Marculphi. T. R. ap. Gillingham. IX. die Decemb. (1253)." — Ib.

THE END.

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